DEPARTMENT OF EDUCAT

ALBERTA

PROGRAMME OF STUDIES FOR THE HIGH SCHOOL

BULLETIN VI

Prescribed Courses and Special Regulations

for the Technical Subjects.

EDMONTON, AUGUST, 1939

DEPARTMENT OF EDUCATION
ALBERTA

SPECIAL REGULATIONS OF THE DEPARTMENT

RELATING TO THE
TECHNICAL SUBJECTS
OF THE PROGRAMME OF STUDIES FOR HIGH SCHOOLS

No provision is made in the revised programme of studies for a special technical diploma. The technical subjects are classified as regular subjects of the programme, to be selected by students who are specially interested in the practical application of technical theory, or whose vocational aptitudes lie in the direction of Shop Courses.

The following are the Technical subjects or Shop Courses with the credit values of each:

Woodwork 1 with Drawing and Design for Boys	8 credits
Woodwork 2 with Drawing and Design for Boys	8 credits
Woodwork 3 with Drawing and Design	10 credits
Metalwork 1 with Drawing and Design for Boys	8 credits
Metalwork 2 with Drawing and Design for Boys	8 credits
Metalwork 3 with Drawing and Design	10 credits
Automotives 1 with Drawing and Design for Boys	8 credits
Automotives 2 with Drawing and Design for Boys	8 credits
Automotives 3 with Drawing and Design	10 credits
Electricity 1	8 credits
Electricity 2	8 credits
Electricity 3	8 credits
Printing 1	8 credits
Printing 2	8 credits
General Mathematics 3	5 credits
N.B. The outline for this subject is to be found in a separate pamphlet entitled "Syllabus for General Mathematics 1, 2 and 3."	
Arts and Crafts 1	8 credits
Arts and Crafts 2	8 credits
Arts and Crafts 3	10 credits
Homemaking 1 with Drawing and Design for Girls	8 credits
Homemaking 2 with drawing and Design for Girls	8 credits
Homemaking 3 with Drawing and Design	10 credits
Fabrics and Dress 1 with Drawing and Design for Girls	8 credits
Fabrics and Dress 3 with Drawing and Design	10 credits

Credits will be secured in Shop Subjects for the first and second year on the following basis:

Drawing and Design	2
Theory	2
Practical Work	4
	8

Credits for the third year shop Subjects will be secured on the following basis:

Theory including Drawing and Design	2
Practical Work	8
	10

Two shop subjects may be selected in either first year or second year for which the total of 15 credits will be the maximum.

Only one shop subject may be selected in the third year for which the maximum credit will be 10.

Course Outlines

DRAWING AND DESIGN (Boys)

(This subject is an essential part of each of the first year shop courses for boys.)

Mechanical Drawing

The use of drawing instruments, tee and set squares, and scale. Isometric projection, cabinet projection.

Description of orthographic projection (1st and 3rd angle) by freehand sketching, with models such as prisms, pyramids, and simple machine parts.

Drawing to scale, with dimensions, in orthographic projection, geometrical models and simple machine parts.

Geometry, bisecting lines and angles, formation and names of triangles and polygons.

Freehand sketches, dimensioned. Projects of an artistic nature may be designed in the Art department, showing proportion, dominance, etc., but without dimensions; then from this sketch complete working drawings, with dimensions, may be made for shop purposes.

Inking in, tracing.

Design

This course in Design aims to acquaint the pupils with the fundamental principles of design, to teach the application of these principles to work required in various Shop projects, and to give a knowledge of the use of simple colour combinations.

The amount of work to be accomplished by the student will vary. The instructor must satisfy himself that each student has a thorough grasp of the objectives and has produced a sufficient amount of work to the limit of his capacity. Slowest pupils should be expected to complete six or seven plates on 12" x 18" paper, in the boys' course.

Principles of Design

A study of the principles of proportion, balance, dominance, rhythm and unity. Careful correlation with shop work should be observed here. Selections of various articles from wood shop or metals may be used for study and drawing. As each principle is studied, illustrative drawings of interest to the students' course should be made.

Colour

A review of the colour circle, values, intensities and colour schemes. Pupils should be allowed to experiment here, and have a choice of media, such as water colour, pastel, showcard or cut paper.

Applications of Design Principles

(a) The working out of some definite project in original design, for practical application to shops elected by student. The following only serve as samples of what may be done, and in no way limit the number that may be attempted:

Transformer box for the electricity shop.
End-table for woodwork shop, showing carved or stencilled panel on top or end.
Paper knife design for sheetmetal shop. Several may be designed and one selected for actual knife to be made.
Bent-iron lamp stand or foot-scraper for forge shop.
Radiator caps or hub caps for auto shop.
Turned metal candle stick or table lamp bases, for machine shop.
Layouts for cards and page arrangements for print shop.

(b) Conventionalization of a unit to fit various shapes, such as a circle, triangle, and rectangle. Motif from nature form or simple abstract. From this a selection may be made and applied as a variable unit, such as a change of outline; a change of proportion; a change of values; a change of internal parts. From these variations the unit to be applied to a practical problem such as cutting a stencil, planning a chip carving design, etc.

Other projects may include the following:
Turned hammer, clamp, turned metal match-holder, wall switch-plate, sconces, car dash-boards, car luggage carrier, bent-iron wall bracket, bent-iron plant holders.

DRAWING AND DESIGN (Girls)

(This subject is essential as a part of Fabrics and Dress 1 and Homemaking 1)

Figure Drawing

Several times during the year figure drawing should be introduced as a preparation for second year work. Study proportions and relations of different parts of human figure, and give timed pose drawings of figures in standing position. At least eight such studies should be made, one every month.

Principles of Design

A study of the principles of proportion, dominance, balance, rhythm and unity. This section of the course differs from that of the boys' course, only in the selection of illustrative material and drawings done by students. These should be related to dress, home craft, etc. Pupils should be allowed to work on large 12" x 18" sheets if material is available. (This section should be completed by the end of the first term.)

Colour

The study of the colour circle, intensity, values, and six different pleasing colour combinations.

These should be definitely connected with everyday associations such as dress, walls of rooms, dishes.

Units

Conventionalize a motif either from nature or simple abstract. Show variations of this as follows: a change of outline; a change of proportion; a change of texture; a change of colour; a change of internal parts.

A definite design for practical use should follow this. The unit may be varied for quilt pattern, cutwork, solid embroidery, cross stitch, lace, china, pillowcase, vases.

Applications of Design Principles

(a) Italian Quilting

Teach single line and Italian quilting. Work out a pattern for an oval, elliptical or circular cushion top.

(b) Stencilling

Teach materials suitable for stencilling, and articles of use, which are best stencilled. Work out a pattern and cut stencil from shellacked cardboard. Cut negative, and carry out actual stencilling project on article of use.

Portfolio

Some suitable portfolio or container should be made, to keep year's work of each student. Each container should provide a problem in design, and an application of colour theory learned.

DRAWING AND DESIGN (Boys)

(This subject is an essential part of each of the second year shop courses for boys.)

Mechanical Drawing

Elements of projection drawing.
Scale drawings of objects made in the shop, or of simple tools.
Ellipse, spiral and helix and objects based on same.
Types of screw threads, typical bolts and screws, using the conventional methods.
Development of surfaces for simple sheetmetal problems, based on the cone, prism, and cylinder and use of the triangulation methods. No angular intersections.
Assembly and detail drawings of a special shop problem.
Tracing and blueprinting.
Inking in.

Freehand Drawing

Shop sketching and dimension drawing. Relate to shop projects and equipment.
Shop sketches should appear in note books.

DRAWING AND DESIGN (Girls)

(This subject is an essential part of the Fabrics and Dress 2 and Homemaking 2.)

Suggested Problems

Make a human proportion chart of the Greek type figure. Using a head length as the unit of measurement, practise measuring heights, shoulder widths and length of limbs of several members of the class. Make 20-minute pose drawings of figures in standing positions.

1. Dress Design

Line

1. Silhouette
2. Line in construction
3. Line in patterned material
4. Line in various trimmings.

Dressing Type Figures

1. Tall slender
2. Short stout
3. Tall broad
4. Short slender
5. Tall angular

Discuss what each type should wear.
Design dresses for each of these types.

Historic Costume

Study the clothing of the Egyptian, Greek and Byzantine periods.
Make a drawing from a picture of an Egyptian, Greek or Byzantine dress.
Design a modern dress from one of these historic motifs.

2. Colour Problems

Review colour theory and colour harmonies of Drawing and Design 1.
Mount in note book sixteen-inch-square, patches of different coloured cloths. Name these with the Munsell system of colour, naming - Hue Value 1 - 9
Intensity 9 - 0
Break up spaces with simple and compound curves. Apply colour harmonies to these spaces in flat washes. Watch that as the intensity decreases the areas increase.

3. Craft Problems

First Craft Problem

Make an abstract design for crewel embroidery of vari-coloured wool or raffia for some article of use such as folded purse, sewing bag, shopping bag or cushion top. The design to be worked on plain or coloured canvas.

OR

Make a design for a small hooked rug - conventional, abstract or geometric. Trace on canvas sewn to a stretcher and work with strips of coloured knitted goods.

Linoleum Block Printing

Work out a triangular or rectangular design in masses with charcoal or brush and ink, having no spaces less than one-eighth inch wide. Trace the design on the block or on transparent paper glued to the block. Cut away the background. Print with dye or paint on material.

Small practice blocks may be tried out on handkerchiefs or personal greeting cards.

One large block print should be made for tie-ends, scarves, collar and cuff sets, or any other accessory in vogue. The same block may be used for a repeat surface pattern on lining for a portfolio.

Gesso Problem

Make a decoration on low-relief gesso on a pair of book ends or an octagonal or hexagonal wall plaque. Gild and colour and give antique finish.

OR

Make a design in coloured enamels on a pair of wood book ends or an octagonal or hexagonal wall plaque. Outline the masses in a neutral or contrasting colour.

4. Interior Decoration Problems

(1) Make sketches on squared paper of a bedroom, living-room or dining-room at home, a floor plan and the four wall elevations. Accurate measurements taken and recorded.

(2) From these make a carefully drawn series of the same plan and elevations on separate sheets. (Scale ½ inch to one foot.) Everything in the room should be drawn in plan or elevations to same scale. The prevailing colour scheme should be washed over these drawings.

(3) Teach the application of the Principles of Arrangement to Interior Decoration. Deal with -

(a) Colouring of rooms with regard to exposure.
(b) Value in ceiling, walls, trim, and floor.
(c) Wall coverings, hangings. The amount and scale of patterned material used. Upholstery.
(d) Placing of furniture.
(e) Hanging of pictures, lighting fixtures, accessories.
(f) Floor coverings.

5. Portfolio

Make a portfolio with pockets and tapes. Size - 13" by 19" to hold the year's drawings. A tracing of one of the designs from the year's work with the student's name may be put on the cover.

This problem may be taken early in the year if the students need a means of carrying their drawings.

DRAWING & DESIGN

(This subject is essential in each of the third year shop courses)

Sections. (Drawn to various Scales.)
Complete (Assembly) working drawings of Shop Projects or other suitable projects from the details completed in previous year.
Helix, and its application to Square Threads, Springs, etc.
Orthographic projection of more advanced machine parts.
Ellipses and their application

Conic sections and cross sections.
Sheetmetal developments of more advanced models. Freehand sketching of more advanced machine parts. Inking, tracing and blue printing.

For Woodwork 3 students the work with the helix and the sheetmetal development problems may be omitted for a corresponding type of drawing having a more direct bearing upon building construction or cabinet making, such as a set of working drawings to scale for either a simple building or more advanced woodworking problem.

Books for Teachers' Reference

Applied Drawing - Brown (Metzner, Bush and Co.)
Interior Decoration - Jockenay
Elements of Art and Decoration - Morgan (Bruce Publishing Co.)
Ornamental Home Crafts - Littlejohns (Pitman)
Applied Art - Lemos (Pacific Press and Publishing Co., Mountain View, Cal.)
Elements of Interior - Whitton (Lippincott)
Industrial Arts Design - Varnum (Manual Arts Press)
Design - Bush and Wellbourne (Little Brown and Co.)
A Course in Mechanical Drawing, Book I - Soutar (Institute Press, Edmonton)
Engineering Drawing - French (McGraw-Hill)
Manual of Machine Drawing and Design - Low and Bevis (Longmans Green and Co.)

WOODWORK 1

The general aims of the courses in Woodwork are the following:

To associate thinking and doing by demonstrating the intimate relation between design, drafting, methods of execution, and the finished product.
To impart a practical knowledge of some elements of construction as applied to wood.
To stimulate self-direction and self-control through this purposeful activity.

The course consists of lessons in Theory and Demonstrations by the instructors, and the making of objects by the students. It is based on a time allotment of from four to six hours each week, divided into two lesson periods of from two to three hours each. About one-sixth of each lesson period should be used for the theory and demonstrations.

The Theory should consist of practical information on matters closely associated with the shop work. Actual objects, tools, and materials should be used with simple diagrams and blackboard sketches. The students should make brief notes and sketches. The following topics should be covered: need for and use of drawings; listing materials and estimating quantities; lumber industry and manufacture of lumber; properties and structure of wood; characteristics and uses of some common woods; typical woodworking hand tools; woodworking lathe, its history and development; methods of sharpening edge tools; common joints and fastenings, glue, screws, nails; methods of wood finishing, filling, painting, staining, varnishing; woodworking trades and occupations. Elementary study of the use of the steel square.

The Demonstrations exemplify the correct use of tools and proper methods of shaping, jointing and finishing wood in connection with all phases of the work outlined. They must be given by the instructor as an introduction to all new work, either as class demonstrations or individually.

Shop Work

Suitable projects will be selected to include the following types of work: edge-to-edge joint; butt joint; tongued and grooved joint; mortice and tenon joint; mitre joint; edge shaping; lathe work; spindle and face plate; fastenings, glue, screws or nails; wood finishing, staining, varnishing, painting, dovetail joint.

Each student should also make as many pieces of wood work as time will allow, such as: a shooting board, window box, tool box, hopper, pigeon house, hen coop, dog kennel, pastry board, drawing board, notice board, ironing board, blueprint frame, small gate, framed shelf bracket, saw-horse, dwarf step-ladder, small work-bench, window screen, stand for jardiniere, costumier, turned candlestick or table lamp, pedestal, piano bench, book shelves, book trough, bookcase, bathroom cabinet, small chair, small table, high stool for kitchen, hinged fire screen or bed screen, radio box, glove box.

A rope fibre or sea grass project will provide variety in the course.

Models

The models made by each student should embody as many types of work as possible. The types not included in the larger pieces should be done as practice work following a demonstration, but should be embodied in a small useful project rather than exercises which have to be discarded.

Some wood turning shall be done as separate pieces, unless turning is included in the models constructed.

Each student should keep a brief record of the work done by him each day. He should also make a dimensioned sketch of each piece of work he does.

These projects should provide a maximum experience in handling tools commensurate with the student's ability. These should be selected with the following objectives in mind:

Utility (something useful at home or desired for use by the student)
Cost - the student should be able to buy the material when the work is completed.
Challenge to the student's ability - not too simple nor too difficult.
A variety of experience should be gained by the piece selected.
Scope for application of principles of design and the use of simple decoration.

Students with limited or no previous experience in woodwork will be assigned simpler projects. Those with previous experience will be expected to present a larger amount of work and include more difficult examples.

Examples

The following is a suggested list of examples of exercises or practice pieces: book ends, nail box, soap box, collar box, knife box, cutting boards.

Examples of larger models are the following: window box, tool box, pigeon house, hen coop, dog house, drawing board, ironing board, clothes horse, kitchen stool, medicine cabinet, small gate, saw horse, tea tray, jewelry box, end table, copper table, smoker's stand, book case, book shelves, book trough, turned lamp, candlesticks.

A complete daily diary or log is required.

Textbook

Woodwork, Practice and Theory - Wishart (Copp Clark Co.)

Reference Books and Magazines

Principles of Woodworking - Hjorth (Bruce Publishing Co.)
Woodworking for Secondary Schools - Griffith (M.A.P.)
Handwork in Wood - Noyes (M.A.P.)
Woodwork for Junior High Schools - Hamilton (C.C.)
Wood and Forest - Noyes (M.A.P.)
Correlated Courses in Woodwork and Mechanical Drawing - Griffith (M.A.P.)
Problems in Farm Woodwork - Blackburn (M.A.P.)
Drawing, Design and Craftwork - Glass (Batsford)
How to Work with Tools and Wood - Stanley

WOODWORK 2

Woodwork 2 includes both Carpentry and Cabinetwork. Students may elect either Carpentry or Cabinetwork; but where the instructor can make the necessary arrangements, it will be permissible for students to take parts of both courses.

CARPENTRY

This course provides an opportunity for practical work connected with building.

The special aims of the course are the following:

1. To provide actual experience in some of the work done by carpenters.
2. To demonstrate the use of wood as a structural material.
3. To associate practical work with scale drawings and the interpretation of plans.
4. To disclose the pupil's reactions to work of a structural or mechanical nature.

The work outlined is based on a time allotment of from four to six hours per week, divided into two lesson periods of from two to three hours each. It consists of Shop Talks, Demonstrations and Shop Work.

Shop Talks

From ten to twenty minutes each day should be devoted to talks on matters connected with house building. The following topics will suggest material for talks: Houses of primitive peoples; modern houses; house plans - why needed, what they tell; various drawings needed and common scales used; what cannot be found out from plans, how provided for (specifications); advantages and disadvantages of the use of wood for houses; characteristics of the common kinds of lumber used in building; common sizes of manufactured lumber; how lumber is calculated; how estimates are made up; wall construction for frame house; wood floors, wood roofs, millwork; doors; windows; stairs; finish; other trades needed on a building and some of the work they do; woodworking machines; sash and door factories; the use of the level and plumb-bob; the uses of the steel square in laying out the common rafter and stair stringer; the prevention of accidents, etc.

Demonstrations

All new operations should be shown by the instructor as needed and subsequently performed by each pupil. At least one or more examples of each of the common joints listed in Grade IX, and some special carpentry joints such as splices, scarfs. Use of special tools, such as steel square, combination plane, etc. Saw sharpening, the use of the bandsaw, circular saw and planer should be taught but they should only be used under the direct supervision of the teacher.

Shop Work

Suggested projects: carpenter's saw horse, pair of trestles, porch steps, step ladder, storm door, screen door, cupboard door, storm sash, cellar sash, sash for hot-bed or cold-frame, casement window, table or seats for breakfast nook, porch or verandah seats, framed gate, carpenter's work-bench, small kitchen cabinet, pantry bins, scale models of typical examples of larger pieces of construction, such as roofs, bridges, oil derricks, builder's hoist towers, house framing, etc; full size parts of house frame, roof truss, stairs, etc., to illustrate methods of construction.

Pupils shall make a dimensioned sketch of each joint or other piece of work they make. They shall also keep a brief record of the work they do each day.

Textbook

Carpentry - Griffith (M.A.P.)

Reference Books

Details of Building Construction - Radford (Radford Publishing Co.)
Tool Manual for School Shops - (H. Disston and Sons Inc.) Free
How to use the Steel Square - (Stanley Rule and Level Co.) Free
American Builder (Monthly) - (Radford Publishing Co.)
Industrial Arts Magazine
Industrial Education Magazine
Catalogues of Millwork manufacturers - Free

CABINETWORK

The specific aims of the course are the following:

1. To provide practical work in the common methods of furniture construction.
2. To exemplify the artistic treatment of wood.
3. To associate the work with the principles of design; particularly to harmonize the elements of use, material and construction with aesthetic requirements.

The course outlined is based on a time allotment of from four to six hours per week, divided into two lesson periods of from two to three hours each. The main portion of the time is to be given to pupil's work with tools but the instructor will devote from ten to twenty minutes each day to shop talks and a short time to group demonstrations whenever several students are ready to use a new tool or have to perform a new operation.

Shop Talks

Shop talks should deal with furniture making as an art-craft. The following material will provide topics for talks: various kinds or types of furniture; primitive forms of common kinds; change of form and introduction of new kinds; materials used - old and new; wood as a furniture material; characteristics of five or six of the best woods for furniture making; the cutting of the wood so as to exhibit typical features; veneers, parquetry work; inlays; incised and relief carving; upholstery; spraying, lacquering, French polishing; design - periods and styles, effect of use and materials, application of principles; special joints used; special tools used; preparation of bills of material; wood-working machines; furniture factories; specialized trades in furniture making.

Demonstrations

Demonstrations are to be given by the instructor to groups of students of operations subsequently to be performed by each student, and to include the following: At least one more example of each of the types of work (joints or operations) listed in Grade IX and to include such joints as the drawer dovetail, haunched tenon, and butt mitre; use of special tools such as the scraper, combination plane, etc.; chuck turning and other special uses of the face-plate; incised and relief carving; parquetry work and inlaying; French polishing; use of the bandsaw and circular saw. (These should only be used under the direct supervision of the teacher.)

Shop Work

Suggested Projects: Tables - card, tea, library, dressing; writing desk, sewing cabinet, telephone stand; chairs - kitchen, dressing, tea, rocking, Morris; cabinets - music, radio, china, bureau; tea wagon; hall rack; linen chest; mantel-piece or overmantel; child's cot; turned floor lamp, vase, trinket case or egg-cup; carved panel book supports, chair rails or chair legs; inlaid tray or table top; parquetry chess board or tray; upholstered stool, leg rest or chair seat.

Each student shall keep a brief record of the work done by him each day. A dimensioned sketch shall be made of each model or joint done.

Textbook

Principles of Woodworking - Hjorth (Bruce Publishing Co.)

Reference Books and Magazines

Woodwork for Secondary Schools - Griffith (Manual Arts Press)
Cabinet Making - Rudd (Grand Rapids Furniture Co.)
Furniture for the Craftsman - Otter (U.P.B. Book Co. Inc.)
Industrial Arts Design - Varnum (Scott, Foresman and Co.)
Problems in Artistic Wood Turning - Ensinger (Bruce Publishing Co.)
Practical Wood Carving - Rowe (Bruce Publishing Co.)
Essentials of Upholstery - Bast (Bruce Publishing Co.)
Woodworking Machinery - Noyes (M.A.P.)
Canadian Book of Furniture - (Acton Publishing Co.)
Industrial Arts Magazine - (Bruce Publishing Co.)
Industrial Education Magazine - (M.A.P.)
Catalogues of Furniture Manufacturers - Free.

WOODWORK 3

A student may select either of the two phases of this subject or a combination of the two, subject to the approval of the instructor.

A. BUILDING CONSTRUCTION

Theory - Construction factors involved in the erection of a small house, location on the grounds, excavation and foundation, structural features and layout, plumbing, wiring, plastering, painting, and finishing. Materials required - lumber, concrete, brick, plaster, stucco, insulating materials, roofing materials, paints, heating units, ventilation, air conditioning, electrical equipment; specifications and estimating costs; trades involved and functions of each trade.

Suggested Projects: An actual building to be used for some useful purpose, dog kennel, door frame and door, window frame and sash, scale model of stairway with winder; hip roof, gambrel roof; rafter cutting on useful project on large model to scale; built-in features such as cupboard, bathroom cabinet, clothes press.

B. CABINET WORK

Suggested Projects: Construction of more advanced projects to which the previous years have led up to, such as bedroom suite, diningroom suite, buffet, tables, chairs, cabinets of various types using hard wood, wood decoration, carving, parquetry; wood finishing · French polishing, staining.

A loom or a spinning wheel makes a particularly good project.

A daily diary or log shall be kept.

Reference Books

Architectural Details - Ranillon and Ramsay (John Wiley and Sons)
How to Read Plans and Take off Bills of Quantities - (Radford Publishing Co.)
Art Principles in House, Furniture and Village Building - Clark (Stanford University Press)
City Building Bylaws
How to Light Your House - Westinghouse
Heating Manual from a Manufacturer
Millwork Catalogue
Hardware Catalogue
Woodwork - Practice and Theory - Wishart

METALWORK

A knowledge of metals and their properties, uses and manipulations is the ABC of a multitude of vocations. Many boys will find careers intimately associated with metal. Even if they never become metal-workers, their experience with metal will be useful in many ways throughout life. The satisfaction of knowing, in an intimate way, something of the great world of metal is very much worth while. Working in metals gives myriad opportunities for applying the principles of mathematics and of science, and in this way vitalizing these oftentimes dull and uninteresting subjects. No finer hobby than work of this sort can be found as an antidote to mental and spiritual weariness.

In the following courses it is intended that iron shall be the metal commonly used. No distinction is made in the relative importance of forging, of sheetmetal working or of machine shop practice. A small heating furnace for melting metals and for molding makes an admirable piece of shop equipment, although castings may be readily procurable from outside sources. The making of patterns and casts establishes an excellent correlation between the woodshop and the metal.

While certain requirements are made fairly definite, there is no intention of restricting the initiative of either the instructor or the student. The projects listed are merely suggestive. The desire of the student and the resourcefulness of the instructor will suggest in many cases more suitable projects. The enthusiasm of the leadership in this department will lead to many hours spent in this shop not provided for in a regular time-table. This full use of shop equipment is worthy of encouragement.

The requirements listed below should not be regarded either as minimum or maximum. Some students may do less work and, on the other hand, interested and capable students may do considerably more.

Objectives

The course in Metalwork aims to open up the great field of metals to boys, in order that they may discern the opportunities offered by metal-working as a life vocation, and find out their aptitudes and interests with respect to the metal-working trades. The course also offers opportunities for expressional experiences in the handling of metal-working tools, material and equipment. It will induce habits of carefulness and accuracy, and encourage initiative in the creation and development of ideas.

The course is built on the assumption that the student will have from three to four hours per week in the shop. While it will be necessary to organize the student's time so that he will get experience in all three sections of the shop, his individual inclinations should be recognized in such a way that he may spend the greater portion of the time on some major project.

Theory should be given incidentally with shop practice. Notes should be roughly taken in shop and carefully preserved in permanent form as an out-of-shop requirement. Drawings should be intimately related to shop practice. Work cards and records of the student's work should be kept. Drawings, sketches and note books should be made available for the inspector on his official visits.

A daily diary or log shall be kept by each student.

METALWORK 1

Shop rules and management; safety-first habits, personal safety, safety to others, safety to equipment.

Elementary ideas in the metallurgy of iron and steel.

Useful properties of lead, copper and tin; extraction and uses; identification and working properties of ferrous metals

Machine Shop

Care and use of hand tools, such as the hammer and chisel, hacksaws, files, taps and dies; use of measuring tools, steel rule, calipers, dividers; a working knowledge and operation of the simple processes on drill press and lathe, including the names of the various parts and their care.

Projects including operations in laying out, marking, cutting, filing, sawing, drilling, turning, knurling, polishing. Theory will be given in connection with shop rules, safety precautions, technique relating to chisels, drills, sleeves, sockets, proper speeds in turning and drilling different metals, and use of grinding wheels.

Forging

The forge fire, its operation and maintenance; preparing coke from coal; tools and their classification; effect of heat on the force of cohesion in iron and steel; forging principles and their correlation to science; materials used in forging.

Projects to involve simple and composite forging principles from the following: ending, drawing, upsetting, twisting, fagot welding.

Suggested Projects: eye-bolt, s-hook, ring, staple, tee-bolt, gate hook, scriber, meat hook, fagot weld.

Sheetmetal

The development of the surfaces of the cylinder and sections of same; e.g., a cake cutter; working from dimensioned sketches; the layout directly on the metal. The following processes will be taught; cutting, folding, forming, rolling, fitting, peening and soldering. The fundamentals of soldering, fluxes and solder.

The development of a rectangular box with a hinged cover; working from sketches and layout directly on the metal. Processes in cutting folding, braking, peening, double seaming, soldering, wiring and hinge construction. Sweat soldering.

The development of a conical article, e.g. a funnel. The student is given a dimension, the full size drawing made on paper, the pattern developed, transferred to metal and made up. Processes: transfer, cutting, hand forming, wiring, wire forming, tinning and sweat solderin

A simple piece of etching on copper or brass, e.g. a watchfob or a bracelet. Designs worked out in correlation with Art department. The design is executed inmetal. Stress the importance of good design.

These projects are merely suggestive. Other projects will suggest themselves to the instructor. Projects should be graded according to the ability of the student.

Textbook

Machine Shop Practice, Vol.I - Jones (Nelson and Sons)

Reference Books

How to Run a Lathe - (South Bend Lathe Works)
The Starrett Book for Apprentices (Starrett Co.)
Pitman's Crafts-for-All Series
Essentials of Sheetmetal Working - Doherty (U.P.C. Book Co.)
Sheetmetal Worker's Manual - Boremal (Drake Publishing Co.)
Machine Shop Primer - Colvin and Stanley (McGraw-Hill)

METALWORK 2

Shop talks incidental to the work of the shop continue as in the first year; useful properties of zinc, aluminium; extraction; uses.

Machine Shop

Lathe turning, taper and thread cutting, shaper work, grinding. First year work included as necessary.

Suggested Projects: Vise, engine model, lathe, jack, grinder.

Forging

As in the first year with the following operations added: fullering swageing, punching, splitting and welding, hardening and tempering.

Suggested Projects: eye-bolt, square-headed bolt, tongs, hook, ring, clevis, foot-scraper, ice tongs.

Sheetmetal

More advanced projects involving cutting, edging, forming, bending, burring, wiring, riveting, seaming and soldering. Models should involve these processes.

Suggested Projects: Grocer's scoop, measure, elbow section camp stove, garage heater, mouldings, pail, dairy utensils.

Special attention should be given to forming simple mouldings, mitring, soldering, fastening movable parts, as hinges.

Suggested Projects: picture frames, model furniture, medicine cabinets.

Textbook

Machine Shop Practice, Vol. I - Jones (Nelson and Sons)

Reference Books

American Machinist's Handbook - Colvin and Stanley (McGraw-Hill)
Machine Tool Operation - H.D.Burghardt (McGraw-Hill)
Starrett Date Book for Machinists - H.P.Fairfield (Starrett Co.)
How to Run a Lathe - (South Bend Lathe Works)
Forge Practice - J.L. Bacon (John Wiley and Sons)
Notes for Forge Shop Practice - Littlefield (Taylor-Holden Co.)
Exercises for Forge Shop Practice - (Buffalo Forge Co., Buffalo)
Elementary Force Practice - R.H. Harcourt (M.A.P.)
Sheetmetal Workers' Manual - Boremal (Drake Publishing Co.)
Essentials of Sheetmetal Working - Doherty (U.P.C. Book Co.)

METALWORK 3

Students may select a single phase of metalwork or any two phases.

The metallurgy of iron and steel more fully developed; tempering and heat treatment.

Suggested Outline: The history of iron and its contribution to man's life; steel and its service and value to man; Canada as an iron and steel producer. Cast iron, wrought iron, the Bessemer process, open hearth process for steel, cementation process for steel, crucible cast steel. Classifications of steel - treatment and testing; alloys - nickel steel, chrome steel, tungsten steel, vanadium steel, manganese, stainless and sloy bright steel.

Casting of a few simple articles using some easily fusible metal such as babbit, lead, aluminium or copper.

Machine Shop

A variety of work will be given on lathe such as cutting an acme and square thread, use of compound rest and taper attachments for turning tapers, chuck and face plate work, use of follower and steady rest, and tool grinding.

Shaper will include planing a right-angled corner, cutting serrations and keyways, and angular work.

Milling Machine work (when available) may be used in the milling of a gear, reamer, tap, drill, or part of a machine.

Bench - Fitting and assembling machine parts, babbitting and scraping.

Theory - Grinding angles for cutting tools and drills, gearing for thread cutting on lathe, feed mechanism, taper attachment, babbitting bearings, belt fastenings, types of chisels, shaper mechanism milling machine, micrometer and vernier calipers.

Textbook

Machine Shop Practice, Vol. II - Jones (Nelson and Sons)

Sheetmetal

The student may select purely industrial projects in sheetmetal or he may choose the production of artistic projects or he may combine these two phases according to the direction of the instructor. He should work to his capacity giving due attention to the problems of surface extension and layout work.

Suggested Projects: Ornamental and useful moulding, cabinet, music rack, wire flower receptacles and stands; special care should be taken with design; bake or drip pans, bread boxes, garbage cans, pails, measures.

In decorative metal requiring copper or aluminium or brass or stainless steel, lamps, toasters, trays and plaques, bowls; these models may involve saw piercing, spinning, repöussé, hammering, etching, planishing, concealing soldered joints.

Reference Books

Crafts-for-all Series - Pitman
Essentials of Sheetmetal Working - Doherty (Applied Book Co.)
The Universal Sheet Metal Pattern Cutter - Neubecker (U.P.C. Book Co.)

Forging

Theory: The fusion of metals; fluxes, penetration; preparation of material for welding; exercises with simple materials.

Non-ferrous alloys used in engineering composition, uses, treatment of brass bronze, babbit metal, phosphor bronze, monel metal, manganese bronze.

Suggested Projects: Tools such as cape chisel, gouge chisel, diamond chisel, drills, screw drivers, knives from old files or spring steel; welding; annealing, hardening, tempering artistic forging of such projects as table lamps, plant stands, floor lamps, tables, grills, door knockers, grates, gates, hangers, fences. If possible the student should be allowed to become familiar with the use of the oxy-acetylene torch and the electric arc for welding; casting metals.

ELECTRICITY

The objectives of the courses in Electricity are the following:

To acquaint the student with the tools, equipment and material used in the electrical industry.

To have student learn the terms and symbols used in the study of electricity.

To develop sufficient skill that the student may be able to repair and maintain household electrical equipment such as bells, lighting system, heating devices, small motors and the radio.

To develop a knowledge of the principles involved in the operation of the apparatus commonly used in the electrical industry.

To teach the elementary calculations for electricity, magnetism and power.

To develop ability to draw and understand electrical diagrams by use of the proper symbols.

To teach how to handle electrical apparatus with safety and appreciate dangers in electrical equipment.

To have student realize the value of mathematics, general science and other related subjects as applied to the study of electricity.

ELECTRICITY 1

Currents of Electricity

The electro series, the dry cell, the Leclanche or other cell construction. Introduction of terms used in electro-chemical action in cells. Electrical units - volts, ampere, ohm; positive and negative - direction of flow; introduction to kinds of currents - direct, alternating, pulsating; resistance, conductance, Ohm's law, drop of potential.

Magnetism

Nature of magnetism; classes of magnets - natural, permanent and electro-magnets; magnetic and non-magnetic substances; polarity; law of attraction and repulsion; the compass - declination and inclination; earth's magnetism; magnetic spectra or figures; lines of force; magnetic induction; molecular theory of magnetism; methods of magnetizing steel; magnetic fields and circuits; permeability; application of magnets.

Electro-Magnetism

Study of fields about straight conductors, single loop, helix, solenoid and electro-magnet - flux density, ampere-turn; factors governing strength of electromagnet-permeability; applications.

Electromagnetic Induction or Generation of Electromotive Force

Relation between magnetism and electricity; laws or rules governing the generation of electromotive force in conductors; study of the effect of motion, speed, flux density, when a number of conductors in series and in parallel are being cut by magnetic lines of force; self-induction and its applications in primary coils; mutual induction; a study of the function of each part of various secondary coils. (The applications of secondary coils are so extensive that sufficient time must be taken to ensure a thorough grasp of the principles involved, including the function of the condenser.) The construction of a bell-ringing transformer.

House Wiring

Introduction to 2 and 3-wire distribution. Legal requirements; K and T-wiring, testing for continuity; wires and safe carrying capacities; use of wire gauge, mil-foot, circular mils; common kinds of wire insulation, protection of circuits; plug fuses, cartridge fuses, refills, circuit breakers, testing fuses; testing for location of short circuits, replacing fuses in branch circuits.

Suggested Shop Work

Projects that will include the following processes or operations: making joints in various kinds and sizes of conductors, soldering, "sweating", connecting devices (to include all those common to the average home); tracing circuits and diagramming. Make core for electro-magnet, insulate and wind wire. Tape coil, shellac, cut laminations for core, wind fine wire. Tape joints with friction and compound tape. House wiring (major operations). Wire bell circuits to be done on benches or in booth.

Other projects than those specified may be substituted provided they involve principles and require craftsmanship and time to an extent comparable to the project replaced.

Each student shall keep a daily diary or log.

Textbook

Elementary Electricity and Magnetism - Jackson and Black (Macmillan).
Sections to be studied: 1-27 (omit 19, 20, 23), 338, 28-36 (reference to table on page 48), 57-59, 331, 60-71, 75-76, 79 (without mathematics), 85-94, 96-99, 101-104, 106-108, 250, 297-300, 327-328, 392.
Biographical data at bottom of portraits. Do not stress dates.

Reference Books

Elements of Electricity - Timbie (Wiley)
Electrical Engineer's Handbook - (McGraw-Hill)
Canadian Electrical Code - Canadian Engineering Standards Association, Ottawa.
Essentials of Applied Electricity - Jones (Bruce Publishing Co.)
Applied Electricity for Practical Men - Rowland (McGraw-Hill)
Practical Electricity - Swoope-Housemann (Van Nostrand)

ELECTRICITY 2

Theory

Electro-chemistry; electrolysis of water; electrolytes.
Electro-chemical series.
Primary cells: a study of characteristics of the more common primary cells used in industry, such as the dry cell, Daniell or gravity cell, Edison Leland cells; Applications.
Secondary cells: lead cells, including composition of plates, electrolyte, insulation, characteristics. Nickel, iron, alkali or Edison cell - under similar headings.

General: specific gravities, charging rates, capacities, care and maintenance, applications, methods of connecting in series, parallel series-parallel, parallel series.

D.C. Generators: essential parts and functions of each. Difference between alternating current and direct current generators.

D.C. motors: principles of operation, connections and speed control.

Series, shunt, compound machines; their application in industry.

Fundamentals of alternating current: cycles, frequency, alternations, sine curve or wave.

Transformers: ratio, step-up, step-down, connections for single phase; two and three wire, three phase; three and four wire.

Telephones and telegraph instruments, elementary circuits and discussions of the essential parts and their functions.

D.C. instruments: voltmeter, ammeter, wattmeter; their principle of operation and connections.

Power and cost; power law, watt, kilowatt, kilowatt-hour, horse power, heat losses, calories.

Suggested Shop Work

The projects or jobs to include the following processes: setting up or assembling one or more primary cells, making one or more cells of a lead storage battery, including lead burning, testing, charging and discharging of storage battery. Some direct current armature winding, connecting up and operating direct current generator and motor. Connecting telephone and telegraph circuits, including at least two stations, transformer connections. Instrument work, to determine power input or output of a direct current machine.

A four or a six-volt motor.

Textbook

Elementary Electricity and Magnetism - Jackson and Black (Macmillan)

The following numbers refer to the sections to be studied in the prescribed text: 13-27, 39-44, 47-52, 54, 72, 74, 105, 109-114, 115, 120-122, 139-150, 153-154, 157-160, 162-167, 169-172, 174-175, 176-179, 193-203, 204-209, 250-255, 257, 261, 296, 352-359.

For Reference Books, see list at end of outline for Electricity 1.

ELECTRICITY 3

Theory

Electrical symbols.

Ohm's Law for alternating current circuits.

Elementary study of the following factors in alternating current circuits: inductance, reactance, ohmic resistance, impedance, capacity, hysteresis, eddy currents, core and copper losses, lag, lead, power factor, Star and Delta connections.

Alternators: parts and their function, rotor, stator, exciter.

A.C. Motors: single phase; three phase.

Radio: generation of wave, detectors, tubes, (3 element) rectification, amplification, wave-length, tuning, modern radio equipment.

A.C. instruments: connections for voltmeter, ammeter, bridge and megger.

Rectification: mechanical and electronic, chemical and thermionic.

Shop

Suggested Projects: Tube radio set; rectifier; single phase winding Measure of resistance: voltmeter and ammeter, bridge and megger methods. Connect constant and variable speed motors through a starting device, auto starter or similar apparatus, and measure the current flow.

Textbook

Elementary Electricity and Magnetism - Jackson and Black (Macmillan)

AUTOMOTIVES 1

The first-year course is exploratory, giving the student an opportunity to find himself, and to apply the principles of science to everyday work and living. There is suggested a number of small projects, to be carried out where the student is taught the principles of laying out, cutting out and shaping metal with the use of hand tools only.

It is not intended in this course to make a motor mechanic of the boy. The motor car and its mechanism is offered him for its utilitarian value, and associated with it is the opportunity for teaching many principles of mathematics and science.

Records shall be kept of the work done by each student. Theory should accompany shop practice.

Class Discussion and Theory

The Automobile: early forms of transportation; invention of wheel; social changes due to wheel; early inventions of self-propelled equipment; methods of production.

Licensing: how to obtain license for car and for driver; need for licensing; when obtained; data required; chauffeur's licenses; restrictions; regulations; badge.

Driving: legal requirements; careless driving; safe driving; responsibility; what to do in case of accidents; preparation of car for driving; checking - cooling system, fuel, oil, grease, battery, tires for air pressure and condition; position at the wheel; levers; pedals and purposes; gear shift; controls, stopping; parking rules; stop and go systems; one way traffic; intersections, railway crossings; road courtesies; highway signs; modes of passing on hills and intersections; stopping and turning signals; right of way; safety first.

Care of Car: washing, polishing, cleaning upholstery; reflectors, lamps; use of vacuum cleaner.

Tires: how to order by size and type; styles; inflation pressures; care of tubes and casings; effects of improper inflation; rust on rims; oil on tires; use of talc; painting rims and tires.

Suggested Shop Work

Shop work should be co-ordinated with theory wherever possible. A practical knowledge of the use of tools, necessary in the dismantling and assembling of the units treated in the assigned portions of the text

Engine Division: a general study of the power plant with elementary rotations only; of the fuel, ignition, lubrication and cooling systems. Starting and running an engine.

Chassis Division: dismantle, study the operation of, and assemble: the gear box, the rear axle, the front axle, steering system, study of the frame.

Tires: change and repair at least two types.

Soldering: care and "tinning" of the soldering iron. Make at least two different splices in copper and brass tubing. Complete a project involving the soldering of two types of sheet metal, and of some utility around the shop or from home.

Thread Cutting: complete a project requiring the use of machinists' taps and dies. Also projects having, if possible, all association with the automobile, involving hack sawing, drilling and filing.

There are no minimum requirements set out specifically for attainment. Boys who are capable of doing more work than is outlined here should be permitted to do more complicated and difficult jobs.

Suggested Projects for First Year Shop

Angle-iron or T-iron for corner support; depth gauge; pair dividers; riveted joint with round-head rivets; riveted joint with counter-sink, flush rivets; trammel bar; hermapyrodite caliper; splice copper tube in fuel line; try square; U.S.S. hexagon nut; U.S.S. stud; a hasp for garage door; join two pieces of body steel with solder with a flush finish; a tube flaring tool for two sizes of tubing; tapered punch for flaring tool; a double end spanner; a babbit or lead spoon; a handle and rivet to spoon; babbit and scrape a bearing; a bearing scraper; a nut and bolt tray.

Textbook

Automobile Construction and Operation - Easton and Mahn (Ryerson Press

Reference Books

Principles of Auto Mechanics - Selvidge and Kelsey
Automobile and Gasoline Encyclopedia - Dyke (Goodheart and Willcox)

AUTOMOTIVES 2

A daily diary or log shall be kept by each student.

Theory

Ignition: general treatment as in Chapter 9 of textbook, with special attention to the study of battery ignition.

Starting motors and generators, as in Chapter 10; the single unit system as in text.

Car wiring and lighting, as in Chapter 11, with emphasis on safe head lighting; a practical study of Ohm's law.

Lead acid storage batteries, with Chapter 12 as a basis for the study of this subject. Stress those sections dealing with the chemical components, chemical action and methods of charging and testing; make practical application.

Suggested Shop Practice

A practical knowledge of the use of the tools and equipment necessary in completing the following operations:

Generators: dismantling; testing field, armature and brush gear, for open and short circuits and grounds; undercutting mica in commutator; assembling; testing as a unit; regulating the output.

Starting motors: dismantling; testing field and armature; assembling with Bendix drive; testing for torque; mounting of power plant.

Ignition: testing coils and condensers; testing simple ignition circuit breaker units; timing ignition on power plants; cleaning, adjusting and testing spark plugs; adjusting vibrating and motor-driven horns.

Wiring: Tracing and diagramming the standard circuits of a modern automobile.

Storage Batteries: Building one or more cells of a lead storage battery; charging battery and testing for state of charge using hydrometer Connecting battery to power plant. Lead molding and welding.

Soldering: soldering commutator leads; soldering terminals to wires or cables.

All major operations should be followed by a number of review and research questions. Diagram should be made relative to the work performed.

Textbook

Automotive Essentials - Kuns (Bruce Publishing Co.)

Reference Books

Automotive Repair, Vols. 1, 2, 3 and 4 - J.C.Wright (J.Wiley and Sons)
Automotive Construction and Operation - J.C.Wright (J.Wiley and Sons)
Automotive Manual for Laboratory and Repair Shop - Taylor (Macmillan)
Home Study course in Automotive Electricity - American Bureau of Engineering
Auto and Gasoline Engine Encyclopedia - Dyke (Goodheart and Willcox)

AUTOMOTIVES 3

A daily diary or log shall be kept by each student.

Theory

Iron, steel and common alloys used in the construction of an automobile; other materials e.g. rubber, upholstery materials, paints, glass; automobile design; elementary thermodynamics as applied to internal combustion engines; power output and affecting factors; fuels and designs of combustion chambers and carburetors; lubrication; cooling; front and rear axles; steering devices; tuning up a motor vehicle.

Suggested Shop Projects

General maintenance and repairs covering the following jobs as far as possible: adjusting bearings; fitting piston rings; refacing and grinding valves; cleaning carbon; installing cylinder head; removing and replacing oil pan; alignment piston and rod assembly; precision fitting; checking compression; cleaning and adjusting spark plugs; adjusting timing chain; adjusting fan belt; replacing hose connections; changing and checking oil; rebrushing and reaming; carburetor adjustments; washing, cleaning and polishing car; relining and adjusting brakes; tires and their repair; press work; simple fender work and retouching.

Textbook

Automotive Essentials - Kuns (Bruce Publishing Co.)

Reference Books

Automobile Steels - Hauff, Stein and Goldschmidt (Wiley)
Automotive Construction and Operation - J.C. Wright (Wiley)
Automotive Manual for Laboratory and Repair Shop - Taylor (Macmillan)
Home Study course in Automotive Electricity - American Bureau of Engineering
Auto and Gasoline Engine Encyclopedia - Dyke (Goodheart and Willcox)
Elementary Thermodynamics of Automobile Engines - Hamilton (McGraw-Hill)

ARTS AND CRAFTS

A daily log or diary shall be kept by each student.

With the increase in leisure time due to the use of mechanical labour-saving devices, there is time and energy in many homes for occupations of a creative nature by use of material that is readily available to make products that are useful and valuable in the home. People of both sexes may at any age find these home craft projects recreative and wholesome.

No minimum requirements are set out in this programme. Some pupils with limited ability may get much benefit from such experiences as are afforded, but they may have difficulty in reaching minimum requirements; on the other hand, there will be many who in a short period of time, with the minimum of application, attain such requirements. These brighter students should be kept busy to their maximum ability all the time. It will be observed that the suggested projects vary from the simple to the quite difficult. It is intended that the assignment to the student will be made by the instructor according to the latter's judgment. Many additional projects under each heading will occur to the instructor. Students should be encouraged to suggest projects themselves that what they do may have the largest interest both to the pupil and to the home.

ARTS and CRAFTS 1

A student who elects Arts and Crafts 1 will be expected to devote two half days per week to the work. The section headed General is required for all.

At least two phases of the optional work should be covered for credit purposes, and not more than four attempted in any one year. In the subsequent years a student may desire to specialize more upon some one or two phases but in the first years he should secure a wider experience of a try-out nature.

General - Make Folio

Design

Structural and ornamental design; relation of art to industry; sources of design. Principles and their application.

Drawing and Painting

Geometric solids and nature forms.

Colour

Review color schemes and value and intensity scales, complementary, analogous and monochromatic schemes.

Lettering

Poster alphabets.

Drafting for Girls

Definitions, use of instruments; geometric forms such as isosceles triangle, pentagon, etc.

Commercial Art

More intensive study of lettering; brush exercises; layout; layout as applied to commercial art problems; price tickets, sales cards, bulletins, letter heads, poster; labels; packaging; lino cuts.

Leathercraft

Design bill-fold or change purse, including decoration; thonging; use of punch; press studs; sewing leather; cobbler's stitch; cut leather; stencil patterns; book ends or tea cosy; designs for embossing; use of embossing and modelling tools, comb case or scissor case. Monograms for bag-tag or book mark; extra articles; shopping list, card case, camera case, glove case, playing card case, gloves.

Pottery

Preparation of clays; three-dimensional designs; flower-pot coil method; decorate with colored clay; making slabs; make slab box with lid; make a lamp base; glazing.

History of pottery - Chinese.

Modelling and Plaster Casting

Slabs; low-relief, bird and animal forms; clay - 3-dimensional groups; soap carving - bird and animal forms; model foot, hand, features; simple casting. Wood carving.

Interior Decoration

Study of material used; woods and wood finishes; walls and wall coverings; floors and floor coverings; windows and window coverings; simple floor plans and elevations; re-decorate second-hand furniture.

Stage Art

Construction of model stage for class use. Construction of cardboard model stage by each student; color study for stage effects; various types of settings; as, naturalistic, conventional, abstract; papier mâché masks (simple), marionettes (simple).

Textile Printing and Dyeing

Tie-and-dye: single colors; variegated; top dyeing; batik (simple designs). Block printing; stencilling.

Art Metal

Bent-iron designs for sign brackets; flower vase stands; flower pot rack; hanging flower basket; window box brackets; candle holder; desk lamp; cut, bend, drill and revel metal. Etching in copper and brass. Work out designs for desk set; blotter corners, rocking blotter, calendar. Make these articles and decorate.

Dress Design and Fashion Drawing

Study of line in dress; dressing abnormal types of camouflage abnormalities; neck cuts for different facial types. Hat design. Costume studies.

Book Binding

Pamphlets, one signature; wire bound; paper case; tape binding; making cases; rebinding magazines.

Art Needlwork

Design patterns for embroidery in outline stitch or French knots, appliqué problems; plain quilting; Italian quilting; crochet patterns; crewel embroidery; cross stitch patterns in quad ruled paper; hooked rug designs; patching and darning.

ARTS and CRAFTS 2

Design (Required of all students)

Required: Appreciation. Good and bad in structural and ornamental design (lantern lectures). Scrap book collection of examples. Critical analyses; layout.

Drawing: Cast and pose drawing in pencil, ink or wash; still life groups; imaginative drawings for stories.

Color: Harmonies. Color application for dress, interiors, stage etc.

Lettering: Practice

N.B. - Select any two of the following Second year craft courses.

Commercial Art

Wrappers; Bookjackets; Photo-retouching; Silver print drawings; lino-block cutting and printing in one and two colors.

Draw articles such as furniture, leather work, for reproduction in catalogues or in advertisements.

Leather Craft

Design a bookjacket or magazine cover. Use a panel decoration. Embossing and thonging of edges. Staining. Use of watercolor, oil color, caustic soda, gold leaf. Choice of articles for Second year: music cover, table or radio cover, desk set, tea cosy, ladies purse.

Pottery

Use of wheel. Turning of plaster core. Cast vase. Tile design - line pattern. Glazing. Pottery History - Egyptian.

Interior Decoration

Interior groupings. Drawings of groups or corner arrangements in ink and wash. Color and texture studies. Perspective drawings of rooms. Period furniture - Queen Anne, Early Georgian, Louis XIV, XV, Chippendale.

Modelling and Plaster

Modelling in papier mâché. Use of crack filler, hard putty and gesso, keen cement. Low-relief plaque in gesso. Modelling from casts. Making of armature. Original composition in the round. Casting. Cement tiles in color.

Stage Art

Drop-curtain. Making of properties. Stage settings in color by painting or cut paper, for special plays. Miniature card board models showing stage sets of various types. Simple stage costumes.

Textile Printing and Dyeing

Designing in charcoal. Wall hangings, scarf or cushion top. Work out in color by batik method. Continue work in block printing and stencilling.

Art Metal

Using copper, brass, pewter, etc. Pierced metal. Design pierced metal patterns for such articles as napkin ring, paper knife, bracelet, monogrammed buckle. Make article and saw out decoration. Repoussé in light weight sheet metal. Designs for masks, note book covers, greeting cards, telephone book cover. Minimum - 3 articles.

Bookbinding

Half-leather case. Rope binding. Suede covers. Snap-shot album with posts. Gilding.

Art Needlework

Design patterns suitable for certain purposes; e.g. patched bed spread, cross stitch, petit point, embroidery, weaving. Work out the design in some suitable material.

Dress Design

Color for types. Complexion charts. Study of suitable clothing for athletic type, dramatic type, ingénue type, matronly type. Develop original designs of costumes for these types. Historic costume. Modern dresses from historic motifs.

Industrial Design

Work out original, practical designs for ornamental iron, refrigerators, stoves, radios, furniture, lamp fixtures, leather goods, wall paper, linoleum, dishes, pottery, automobiles, etc. Study factory methods of production of each article designed.

ARTS and CRAFTS 3

Design

Freedom and originality in design to be encouraged; wide latitude should be given students showing originality. A student may desire to follow some special line which should be permitted according to the judgment of the instructor. A composite selection of media or subject may be chosen.

Commercial Art

Show cards; poster designs and layouts; poster technique; greeting card designs; signs on cloth, wood, metal or glass; cut-out signs and window display projects; stencils and brush work; drawings for reproduction; methods of reproduction with visit to engraving plant.

Drawing and Painting

Various media - pencil, pen and ink, crayon, water colors, oil; techniques; sketching of natural objects and landscapes; still life and figure sketching; color mixing and monochrome painting.

Industrial processes and finishing

Materials - wood, metal, canvas, glass, plastics.

Processes - enamelling, lacquering, powdering, graining, gilding, spraying, polishing, leafing. Practice.

Modelling and Casting

Media - wood, plaster, cement, papier mâché, soap, butter.

Projects - hollowware, book ends, mantle ornaments; busts and parts of human figure such as hand, foot, head, ear; animals; plaques; figurines; composition; glazes; use of kiln.

Interior Decoration

Compositions in flat and in perspective; color; models worked out with various media and arranged as sets; arrangement of flowers; History of period furniture: Adam, Hepplewhite, Louis XVI, Sheraton, Empire, Modern.

Stage Art

Model sets for specific play; full size scenery and properties for a dramatic presentation; period scenes and settings worked out; stage technique; lighting effects and color effects; puppets and marionettes.

Art Metal

Jewellery, designs for filigree; drawing out of wire, copper or silver and bending into forms; annealing, soldering; coloring; combinations of small sheet metal units and filigree as in leaf or flower forms; brooches and pendants; shaping of stones for settings; repoussé work, napkin rings, bracelets; chains; rings; buckles; hinges and pins and catches.

Weaving

Looms and their construction; design for weaving various useful articles for wear or decoration; wool and its preparation, fleece cleaning, carding, spinning, dyeing, setting up loom; warps, weaving table mats, scarves, cushion tops, runner, curtains, rugs, cloth.

PRINTING

Printing is a craft with a highly specialized technique, ranging from the use of block letters to the most intricate and delicate work in decoration and illustration. A young student can quickly produce results, given some type and a simple press, of which he may be proud. If offers excellent opportunities for the exercise of taste and initiative, while an expert printer belongs to the category of highly skilled workmen. Intense application must be given at all times to the exercises under construction. Printing excels as a type of training in care and exactness.

A daily diary or log shall be kept by each student.

PRINTING 1

Printing is included in the High School Programme because of its exploratory as well as disciplinary value. Printing is a vocation in which there are frequent opportunities for employment. Such experiences as a student may get in a school print shop may well serve as an introduction to a vocational career.

Outline

Type Indentions - Use of these type formations: hanging indentions, squared, half-diamond and diagonal; setting type in these indentions.

Initial Letters - Use of initial letters: modern use, styles used, tone; setting type with use of initial letters.

Tabulation - Words, figures, leaders; justification of words tabulated into columns; justification of figures tabulated into columns; units, tens hundreds, etc.; use of periods and commas; tabulation of words, figures and leaders.

The School Paper - Organization of the staff. The co-operation of the students should be secured in this project. Officers for the editorial, advertising and circulation departments should be elected or appointed.

Preparation of copy, headings, advertisements; takes, takelines, catch heads; measure of columns and column rule; setting display headings; setting original copy; making up the paper; setting advertisements.

Advertisements - Principles of display; size and measure; borders and margins; interpreting the copy; setting the type for contrast and harmony; use of white space to best advantage; spacing out to size; use of borders and margins.

The Point System - Pica, nonpareil, point; learning the size of the point system and the relation to lineal measure.

Spacing Materials - Leads, slugs, reglets, wood and metal furniture; size and use of leads and slugs; proper way to use leads or slugs joined to make longer measure; size of reglets; use and care; sizes of furniture; use and care.

Stone Work - Chase, quoins, furniture, quoin key, planer stone proof; sliding type into position in the chase; placing furniture around the type; placing the quoins in the form; expanding the quoins; planing down the form; stone proof after lock-up; locking up small jobs.

Platen Press - Important parts of the press; oiling and cleaning; hook-up of the rollers; feeding blank stock; washing the press.

Preparing and feeding live jobs: preparing the tympan; inking up the press; register of margins; getting impressions; feeding the job.

Applications - Setting reprint and manuscript copy, comprising lesson notes, cooking recipes, school announcements and circulars, school admission tickets, the school paper.

PRINTING 2

An outline for Printing 2 will be sent on request to Principals who desire to have it.

HOMEMAKING 1

Home Economics has for its ultimate aim the improvement of home and family life through the training in youth for the vocation of home making. The school, as a rule, is very limited in its ability to duplicate home conditions and the great danger to avoid is the making of the work of the department artificial and stinted. Because it is good theory or good information it is not necessarily good practice. Much of the instruction of a theoretical nature must be given incidentally and informally, duplicating the natural process of learning to do by doing. This does not mean that theory is not important. It is, but care must be taken to relate it to actual situations that are arranged to exist in the school. One of the great precautions to observe is the danger of making the work too academic and such that the instruction does not actually carry over into practical situations out of school.

As a method, participation and manipulative experiences are more important than much lecturing. Note taking can be carried to an extreme. Daily logs should be kept by each student and a careful record of the work done by each should be kept and progress noted. Individual initiative should be encouraged. There is no reason why all students should be working at the same project at the same time. If this variety of project is presented it opens opportunities for much greater individuality, according to the ability of the student.

No minimum requirement is set out in the program. The student with low ability is not overly driven or humiliated in not being able to attain to a minimum, while the able student is not retarded because of the slow pace of the slower moving associates. The bright and capable student should be permitted to progress as rapidly as her ability will permit. She should be given heavier responsibilities and kept constructively busy at all times.

The following analysis of the course, with approximate time allotment is suggested:

Unit I	Foods	18 weeks
Unit II	Family Meals	4 weeks
Unit III	Lunch Box	2 weeks
Unit IV	Home Care of the Sick	5 weeks
Unit V	Laundry	5 weeks
Unit VI	Social and Family Relationships	4 weeks.

This must not be interpreted to mean that this is the order of the work to be taken or that any specific set of lessons should be devoted to any unit. This is left to the discretion of the instructor and the limitations under which the work must be carried on. In unit VI, for example, the best method may be that in which the instruction is incidental. If a four week period is allowed for lectures and discussions the work may become very formal and of doubtful value.

Every department should have a reference library of the books listed in the bibliography. Students should be taught to use this library to its fullest functioning. Reports on special problems assigned according to the abilities of the respective students is a good method.

FOODS

Objectives

To develop appreciation of the skill required to make standard products.

To develop some understanding of scientific and economic principles underlying cookery.

To furnish practice and develop some skill in cooking and care of kitchen, utensils, and equipment.

Laboratory Work

Batters and doughs. Meat cookery. Fish cookery. Fowl cookery. Vegetable cookery. Deep fat cookery. Appetizers and salads. Desserts. Care and cleaning of kitchen and equipment in connection with laboratory work.

Evidences of Desirable Progress
Greater skill in preparing foods that are palatable and attractive.
Greater knowledge of food principles and their use in the body.
Growth in vocabulary of foods and in knowledge of varieties of foods - cheap cuts of meat, organs, different vegetables and ways of cooking them.
Appreciation of the importance of thrift.

FAMILY MEALS - Planning, preparation and serving.

Objectives
To give practice in planning meals to include all the essentials of an adequate diet at moderate low cost.
To develop ability to budget time and money in meal preparation.
To develop appreciation of the niceties of table setting, serving, and manners.

Laboratory Work
Preparation of simple breakfasts, luncheons, and dinner for family.
Dramatization of situations.

Evidences of Desirable Progress
Greater skill and speed in cooking.
Greater ability to judge adequacy and cost of meals.
More ease in serving and in table manners.

LUNCH BOXES - for School

Objectives
To develop appreciation of adequacy, variety, and daintiness in lunches.
To demonstrate that planning and forethought are necessary in order to prepare lunches quickly and easily.

Laboratory Work
Preparation of food suitable for lunch boxes - sandwiches, raisin bread, custards and puddings, cookies, etc.
Packing lunches for children of various ages.
Packing lunches for High School girls.

Evidences of Desirable Progress
Improvement of lunch room conditions.

HOME CARE OF THE SICK

Objectives
To give knowledge which will help the girl to recognize common diseases and to know how contagious diseases are transmitted.
To give training and some practice to enable her to meet home responsibilities, in cases of illness, and to make sick persons more comfortable.

Laboratory Work
Care of the sickroom (methods of dusting, etc.)
Practice in making, and changing bed.
Taking temperature, pulse, respiration.
Making mustard plaster, poultices, compresses.
Preparing hot water bottle.
The blanket bath.
Measuring medicine.
Preparation of trays.
Bandaging.
Simple treatments for nose bleed, fainting, cuts, burns, etc. (Red Cross Manual, First 7 Chaps.)

Discussion
The sickroom - location, lighting, ventilation.
The bed - kind, height, clothes.
Desirable qualities in a nurse.
Symptoms of common diseases.
Communicable diseases.
Visitors.
Care of flowers.
Ways in which a girl may help.
The home medicine chest.

Evidences of Desirable Progress
Ability to render simple services connected with the sick.
Ability to practice sanitary precautions.
Growth in vocabulary.

LAUNDRY

Objectives
To develop appreciation of the dignity of cleanliness.
To teach health through habits of cleanliness.
To make practical application of textile properties.

Laboratory Work
Laundering personal clothing
Cotton, silk, rayon, wool underwear.
Hosiery.
Handkerchiefs.
Dresses and blouses.
Family laundry
Mending, sorting, removing stains, soaking, washing, rinsing, blueing, starching, hanging, drying, sprinkling, stretching, folding, ironing, airing, storing.

Discussion
Hard and soft water, softeners.
Soaps,
Starch,
Blueing.

SOCIAL AND FAMILY RELATIONSHIPS

A. The Girl and her charm, or Personal Improvement

Objective
To develop some knowledge and appreciation of the factors which make a charming girl.

Discussion
Dramatization of situations, and pupil activities.
Discuss desirable qualities in friends and individuals admired.
Make a list of things a school girl can do to be healthy, attractive and happy.
Decide on real factors which constitute charm such as personal appearance, good manners, health, character.
Personal appearance - analyze chief factors, discuss effect on others, list things to be done to appear well groomed.
Good manners - knowledge and practice of rules, sincere desire to give pleasure, friendliness. Utilize in classroom opportunities to make requests politely, acknowledge favors, speak in turn, share supplies, await turn for individual help, introduce, extend hospitality to visitors.
Health - foods as they affect health and appearance. Clothing - style, suitability, weight, care in relation to health and appearance.
Character - listing and discussing desirable qualities observed, quotations, criteria for self-judging, standards for self-help.

B. The girl and her family

Objective
To develop in the girl a sympathetic understanding of her relationship to her family.

Discussions, dramatizations, and pupil activities.
Relationships that exist in the home circle.
Listing benefits and privileges.
Ways in which family members are helpful to each other.
Listing contributions that the girl may make through love, obedience, respect, loyalty, service.
Discuss characters in books.

Bibliography
Elementary Home Economics - Matthews (Little Brown and Co.)
The Family's Food - Lanman, McKay and Zuill (Lippincott)
Foods and Home Making - Carlotta Greer (Allyn and Bacon)
Everyday Foods - Harris and Lacey (Houghton Mifflin)
Foods: Preparation and Serving - Bailey (Webb Publishing Co.)
The Country Kitchen - Lutes (Little Brown and Co.)
Junior Food and Clothing - Kenyon and Hopkins (Benjamin H. Sanborn)
A Girl's Problems in Home Economics - Trilling, Williams, Reeves (Lippincott)
Meal Planning - Bailey (Manual Arts Press)
Breakfasts, Luncheons and Dinners - Chambers (Boston Cooking School Mag.)
Table Setting and Serving - Lutes (Barrows and Co.)
Everyday Manners - Macmillan Publishing Co.
Fundamentals of Home Economics - Jensen, Jensen, Ziller (Macmillan Publishing Co.)
B. C. Manual of Foods, Nutrition, and Home Management.
Home Nursing and Child Care - Turner, Morgan, Collins (D.C.Heath and Co.)
First Aid in the Home - Metropolitan Life
Red Cross Manual of Home Nursing and First Aid.
Methods and Equipment for Home Laundering; United States Department of Agriculture - Farmers Bulletin No. 1497
All about Laundering - Hamilton and Jeffreys (McCalls Magazine)
Why Soap Cleans Clean - Armour and Co.
Foods and Household Management - Ainne and Colley (Macmillan Publishing C
The Girl Today, the Woman Tomorrow - Hunter (Allyn and Bacon)
Your Home and Family - Graves and Ott (Little Brown and Co.)
Home Living - Justin and Rust(Lippincott)
Making Homes - Shultz (Appleton)
The Girl and Her Home - Trilling and Nicholas (Houghton, Mifflin)
A House of Your Own - Lutes (Bobbs Merrill)
The Charm of Fine Manners - Starrett (Lippincott)
Feeding the Family - Rose (Macmillan)
Teaching Nutrition to Boys and Girls - Rose (Macmillan)
High School Dietetics - Wellard and Gillett (Macmillan)
Junior Home Economics Units - Friend and Shultz (Appleton)

FABRICS AND DRESS 1

Clothing is a major universal interest to girls and women. Closely associated with this interest is the matter of personal appearance and social relationships. The life of a girl is tremendously influenced by the way in which she is dressed and appears. These ideas are the basal ideas around which this course in Fabrics and Dress is constructed.

There is a necessity upon most girls and homes to be economical in all things and no phase of this necessity is more pressing than is the problem of comfortable attractive and appropriate clothing. There is no adequate reason why a girl should not master the principles involved in solving this problem satisfactorily, and at the same time experience the thrill that comes from achievement. Home sewing is an art that has been lost to a large degree, the service having been assumed by large commercial houses. While in many respects this may be desirable, so far as the slavish routine is concerned, at least, still there are other aspects to the problem because of which the home has been the loser. There are few pleasures more wholesome or satisfying than those which come with the consciousness of having done something well. The subject is closely associated with art, involving design, pattern, color harmony, balance, rhythm. Decoration is a major subject in dress, involving the hat, pattern and design on the blouse, the neck piece or tie, the under arm bag or purse or shopping bag.

Much of the instruction in this course will of necessity be oral but care should be taken to avoid too much time given to lectures or to discussion. Actual manipulative experience should be major in the interpretation of the program. Projects made for the individual or a close friend are infinitely more appealing than artificially set exercises. These projects should not be stored or kept too long from actual use by the girl. This tends to discourage and slow up her rate of progres Of course, the instructor will not permit a girl to select a project, which is obviously beyond her ability, but care should be taken not to

make the work too academic in forcing too much exercise work as a preparation. The best preparation may be had in the working of some simple project in which the material is inexpensive, but in which the girl may be interested.

Too much note taking is an evil. However, a daily record should be carefully kept by each student of the work done. A textile book with samples and weaves is a valuable study.

No minimum requirement is set out in any of the units nor is the order of procedure in following the units prescribed. The student should be kept employed to the maximum of her ability all the time, and not made conscious that, when a job is done, that is all that is required. Some girls will do a much larger quantity of work or better work than others. It is most important that they make progress or grow in power. One who is not able to achieve so much may attain a higher standing than her more rapidly moving associate by reason of her having made greater progress. To set a more able student to help a weaker is often good practice for both.

The following analysis of the course, with approximate time allotment is suggested:

Unit I	Laboratory and its Equipment	1 week
Unit II	The Girl and Her Charm	2 weeks
Unit III	Clothing	26 weeks
Unit IV	Care and Repair of Clothing	3 weeks
Unit V	Choice of Clothing	2 weeks
Unit VI	Economics of Clothing	2 weeks

This should not be interpreted to mean that the above is the order in which the work will be taken or that any specific number of lessons shall be deovted to any one unit. Consequently this is left to the discretion of the instructor and the limitations under which the work must be carried on. In some of the units the last method may be the incidental method. If a regular series of periods is devoted to some of the discussional units, the work may become very formal and reduced in value.

Detailed Course

THE LABORATORY AND ITS EQUIPMENT

Objective

To give a working acquaintance with all the necessary equipment, and to help pupils realize the desirability of an attractive school environment.

Content

Discussion of responsibilities; examination and demonstration of laboratory equipment.

Types, arrangement, care, use of: sewing machine, scissors, ironing board, storage space.

Personal equipment; indispensable, desirable, prices and qualities.

THE GIRL AND HER CHARM

Objective

To develop some knowledge and appreciation of the factors that make a girl charming.

Discussions and activities

List and discuss desirable qualities in friends, characters in history, in books, actresses.

Discuss qualities which make for charm, and how to develop them; effect of one's personal appearance on others.

Importance of good posture in walking, sitting, standing.

List things to be done daily to appear well groomed.

The constituents of good manners: knowledge of rules of etiquette, feeling of friendliness, desire to please.

List of opportunities for developing charming manners.

Health as a part of charm. Effect of foods on health, disposition, and appearance. Effect of clothing on health.

Criteria for self-judging.

Evidences of desirable progress

Knowledge of the factors which contribute to personal charm; improvement in courteous practices, growth in vocabulary.

CLOTHING

Objectives

To develop good judgment in the selection of styles and materials suitable to the individual girl.

To help girls realize that the selection and construction of garments expresses to a large degree traits of personality.

To give instruction and help in the processes leading up to the construction of projects ranging in difficulty, suitable to the varied abilities of the pupils.

Suggested Projects

Laundry bag, apron, smock or Hoover, nightgown, slip, panties or step-ins, pyjamas, kimona, blouse, sports dress, child's dress, garment made from remnant, made over garment, slacks, shorts, hand work problem in linen, class project.

To develop a realization that the care of one's own clothing is a definite responsibility.

To give the girl a working and practical knowledge of the weave, finishes, launder-ability, durability, textures, widths, prices patterns, etc. found in cotton and rayon, to help her determine the material best suited to her skill and individual needs.

Content

Use and care of the sewing machine; selection of patterns suited to material, age, and occasion; identification, interpretation, and fitting of patterns; personal measurements; preparation of material, placing of pattern, marking, and cutting; assembly. fitting, and construction garments.

Methods of finishing; plan and apply collars; cuffs, belts, pockets, and other trims; evolving standard to apply to the choice and selection material, style, and workmanship.

Identification of standard cottons and rayons. Laundering of cottons and rayons.

Correct posture at work table and machine.

CARE AND REPAIR OF CLOTHING

Objective

To develop some ability to make a neat and comfortable darn, and an inconspicuous patch.

Content

Discuss effect on appearance and poise of holes in stockings; decide on ways to conserve wearing qualities in stockings; decide what size of stockings to wear; equipment and materials needed for stocking darning; darning stockings; criteria for evaluating darns; follow somewhat same outline for a hemmed patch.

CHOICE OF CLOTHING

Objectives

To develop judgment and to learn to appreciate the relation good taste in clothing bears to personality and charm.

Realization of the relation color, line, design, suitability, weight and care of clothing, has to health and personal appearance.

Content

Consideration of present wardrobe, color scheme, social requirements; discussion of good design in relation to types of individuals; color and its relation to individual types; color, style, size, weight, care, etc. of shoes, hose, gloves, hats and other accessories.

ECONOMICS OF CLOTHING

Objective

To develop in the girl the realization that to become and intelligent buyer, one requires a well organized plan and criteria; to help the girl to realize the need and value of a definite plan for spending.

Content

Consideration of factors which make the purchase of ready-to-wear clothing advisable or otherwise; advantages and disadvantages of various types of stores - quality of merchandise found in each.

Sales. What is a bargain? Factory conditions; ethics of shopping.

Clothing budgets and the girl's share of the family clothing; ways in which a girl may help to keep the budget down; compiling a simple individual clothing budget.

Bibliography

Clothing for Women - Baldt (Lippincott)
Principles of Clothing Selection - Butterick (MacMillan)
Earning and Spending the Family Income - Friend (Appleton)
Clothing - Choice, Care and Cost - Woolman (Lippincott)
Textile Fabrics - Dyer (Houghton Mifflin)
Design - Bush and Welbourne (Little, Brown and Co.)
Color and Design - Gellum
Textiles and Clothing - McGorman and Waite (MacMillan)
Fabrics and Dress - Rathbone and Tackley (Houghton Mifflin)
From Thimble to Gown - Van Gilder (Allyn and Bacon)
A Girl's Problems in Home Economics - Trilling and Williams (Lippincott)
Fabrics and How to Know Them - Denny (Lippincott)
Sewing Book - Hyde (Century)
Practical Sewing - Everson (Ryerson)
Clothing for the High School Girl - Baldt and Harkness (Lippincott)
Fibre and Finish - Dodd (Ginn)
Junior Home Economics Units - Clothing - Friend and Shultz (Appleton)

HOMEMAKING 2

A daily diary or log shall be required of each student.

FOODS AND NUTRITION

Aims:

Development of standard, jusgment and skill in planning and serving well-balanced meals.

Development of wise discrimination in marketing.

1. Outline for Discussion Periods:
   - A. Simple bacteriology to include:
     1. Food Spoilage
     2. Kinds of Spoilage
     3. Principles underlying the growth and control of Bacteria, Yeasts, and Moulds.
     4. Comparison of home and commercially canned foods.
     5. Precautions to be taken in the use of canned foods.
   - B. Review and more thorough discussion of the dietetic value of all common foods.
   - C. Food selection and menu-building in greater detail.
   - D. Study of caloric value of foods.
   - E. Simple Chemistry of Foods to include tests for food stuffs, composition of foods, etc.
   - F. Digestion and Absorption of food of all classes:
     1. In the mouth
     2. In the stomach
     3. In the intenstine
     4. Elimination
   - G. Food Sanitation and the Value of Pure Food Laws to the consumer.
   - H. Marketing
     1. Planning before buying
        (a) What to buy according to body needs.
        (b) Consideration of materials on hand.
        (c) Foods in season.
        (d) Consideration of cost.
        (e) Brands and grades of staple, canned or package goods.
     2. Saving measured by purchase of:
        (a) Staples from "Cash and Carry" stores.
        (b) Foods in season.
        (c) Suitable substitute for an article when prices change suddenly.
        (d) Foods by the pound or unit rather than for small coin.

I. Study dietary needs and plan daily rations for -
1. The average family
2. The age
3. Infants and children - modification of the family meal to suit the needs of the small child.
4. Plan luncheon boxes for people of various occupations.
5. Plan meals for special occasions

2. Outline for Laboratory Periods:
A. Preservation of foods:
1. Cold-pack canning of fruit, vegetables, meat.
2. Open-kettle canning of fruit.
3. Jelly making.
4. Jam making.
5. Pickling.
6. Other methods of drying, salting, smoking, etc.

B. Review, continuation and further application of the subjects listed under outline for Laboratory periods in First Year.

Extended work should be given, particularly in the preparation and cooking of -
1. Batters and doughs
2. Meats
3. Fish
4. Game and poultry
5. Salads, garnishes and accompaniments.

There should be included an elaboration of dessers covering -
1. Fruit
2. Cornstarch
3. Frozen desserts
4. Gelatine desserts
5. Steamed puddings and sauces.

Pastries, Entrees, Souffles, deep-fat frying should also be included.

Experimental cookery of a simple type.

C. Marketing, preparing and serving of daily rations for the types mentioned in Section H, outline for Discussion Periods.

The practical work should include -
1. The informal and formal meal.
2. Table decorations - simple and more elaborate.
3. One-dish meals.
4. The plate luncheon or meal.
5. Buffet service of meals.
6. Types of service - English, Russian and Comrpomise.

N.B. Some of the students will undoubtedly come from a distance and will, therefore, find it necessary to bring a noonday meal from home. It should, therefore, be possible to sell products prepared in the laboratory period to these students at a price low enough to cover merely the cost of materials.

D. Field trips to include visits to mill, bakery, dairy, etc.

CHILD CARE

1. Outline for Discussion Periods:
A. Importance of:
1. Bathing
2. Dressing
3. Sleep
4. Sunshine - protection of eyes from strong light.
5. Water
6. Handling of baby.

B. Growth and development:
1. Weight
2. Exercise and airing
3. Plays and toys
4. Habits and training - effects of systematic care.

C. Clothing for the baby.
D. Food for the baby:
    1. Comparison of feeding methods.
    2. Prepared foods.
    3. Modified milk - necessity for doctor's advice.
    4. Care of feeding bottles and nipples.
    5. Food for children of various ages up to and including the school age child.
E. Baby's foes. The effects of:
    1. Unwholesome milk.
    2. Impure air and water.
    3. Unclean playthings, floors, nipples of bottles.
    4. Flies and mosquitoes.
    5. Exposure to over-heated air.
    6. Patent medicines.
    7. Candy.
    8. Pacifiers.
    9. Dust, etc.

HOME MANAGEMENT

Aims:
To create an interest in the study of the business of the home and a desire to produce more efficient homes.

1. Outline for Discussion Periods:
A. Study of the Budget - a plan for spending the income.
    1. Family needs:
        (a) Food
        (b) Clothing
        (c) Shelter
        (d) Household operating expenses - light, heat, equipment, service, telephone.
        (e) General expenditures - personal expenses, advancement
        (f) Saving, charity, investments.
    2. Household Accounts:
        (a) Records of expenditures.
        (b) Convenience of printed forms.
        (c) Paying bills - advantages and disadvantages of cash, credit, cheques.
    3. Value of the Budget:
        (a) To spend wisely.
        (b) To save.
        (c) To give.
        (d) To make adjustments to income.
B. Study of the home life of fifty and of one hundred years ago. Make a comparison with the home life of today and the factors which have been instrumental in its evolution.
C. Selection of a Home.
    1. Sanitary surroundings, air, sunshine, dryness, distance from odors, sounds, unpleasant sights, etc.
    2. Sanitary conditions of basement, floors, walls, plumbing, heating system.
    3. Convenience, type of heat, water, sinks, lights.
    4. Kinds of neighborhood, accessibility to cars, stores, schools, churches, etc.
    5. Owning versus renting the home.
D. 1. The use of color schemes in relation to light and heat; size and use of room; personal taste of individuals.
    2. Color harmony should be apparent in rooms and furnishings: e.g., complementary and analogous colors.
    3. Color values should be carried out, e.g. darker tones should be nearer the floor.
E. Walls and Woodwork
    1. Different treatments - advantages and disadvantages.
    2. Aim to keep unobstrusive and harmonious with other features of the room.
    3. Factors influencing choice of wall coverings: economy, exposure of room, size, use, color of woodwork, etc.

F. Selection of furnishings for each room in the home: (hall, livingroom, bedroom, diningroom, kitchen, closets, laundry).
   1. Purpose.
   2. Qualities necessary.
   3. Cost.

G. Study of Labour Saving Devices
   1. The advantage and use of the small labour saving devices:
      (a) Dish drainers.
      (b) Bread and cake mixers.
      (c) Egg beaters and cream whips.
      (d) Potato parer.
      (e) Fruit corer.
      (f) Slicing devices.
      (g) Water-proof apron.
      (h) Varieties of brushes.
      (i) Small mechanical devices for cleaning.
      (j) Fireless cookers, steam cookers, etc.
   2. Comparative value and cost of larger devices, e.g., vacuum cleaners, carpet sweepers, washing machines, mangles, etc.
   3. Care of devices - cleaning, oiling, replacing parts etc.
   4. Methods of selecting and buying devices.

2. Outline for Laboratory Periods:
   A. Making of budgets for families with differing incomes and standards of living.
   B. Planning of system of expenditures and records for budgets made in A.
   C. Working out of given practical problems in the furnishing of various rooms of the home. (This should be carried out in correlation with the work of the girls in their Art and Sewing classes).

APPROXIMATELY TWO-THIRDS TIME DEVOTED TO FOODS AND NUTRITION.

APPROXIMATELY ONE-THIRD TIME DEVOTED TO HOME MANAGEMENT.

Textbook

Feeding the Family - Rose (MacMillan)

Reference Books

Meal Planning and Table Service - Bailey (Manual Arts Press)
Housewifery - Balderston (Lippincott and Co.)
Laundering
Spending the Family Income - Donham (Little, Brown and Co.)
Food, What it is and What it does - Greer (Ginn and Co.)
Food Nutrition and Health - McCollum and Simmons - (John Hopkins University, Baltimore, Md.)
Newer Knowledge of Nutrition - McCollum and Simmons - (John Hopkins University, Baltimore, Md.)
Business of the Household - Taber (Lippincott and Co.)
Food Study - Wellman (Little, Brown and Co.)

FABRICS AND DRESS 2

A daily diary or log shall be required of each student.

Detailed Course

EQUIPMENT

Specific objectives

To develop skill, accuracy and speed in machine and hand sewing.

Desired outcomes

1. Manipulative skills developed through further use of the equipment in the clothing laboratory.
2. Ability to care for equipment intelligently.
   A. Sewing Machine
      1. As in Fabrics and Dress 1, with practice in the use of the ruffler and tucker.
      2. Each pupil to clean and oil a machine sometime during the term.
   B. In the use of hand equipment, position, speed and accuracy to be stressed.

.B. A practical test in sewing given at the beginning of the term would id the teacher in guiding the girls' choice of material and garments.

EXTILES

Specific objectives

To familiarize students with the fabrics made from silk and wool fibres.

Desired Outcomes

1. To gain an elementary understanding of the significant facts whicl concern the production and manufacture of silk and wool fibres.
2. Ability to care for garments made of silk or wool.
3. Recognition of the advantages and disadvantages of different materials.

A. Silk

1. Brief outline of the evolution of sericulture - China, Japa Greece, Southern Europe, United States.
2. Main countries producing silk.
3. Sources and cultivation of silk - cultivated and wild silk. Life history of the silk worm.
4. Spun silk - basis, character, advantages and disadvantages.
5. Reeled silk - process of reeling.
6. Processes involved in the manufacture of silk -
   (a) Conditioning - reasons for allowing moisture.
   (b) Throwing - purpose and importance.
   (c) Weighting - process, advantages and disadvantages.
   (d) Weaving - Fine yarn lends itself to many weaves - plain, rib, twill, satin, gauze or leno, double-cloth, pile, pattern.
   (e) Dyeing - In the yarn or piece; printing - direct, discharge, resist.
   (f) Finishing - Mechanical or by means of dressings (See "Woolman and McGowan")
7. Cleaning and caring for silk fabrics to include -
   (a) Laundering precautions - use of dry heat, use of strong alkali soaps, exposure to sun.
   (b) Removing wrinkles - hanging in room where there is steam in preference to pressing.
   (c) Dry cleaning - using benzine, carbon, tetrachloride, gasoline.
   (d) Pressing:
      1. Effect of using hot iron on weighted material.
      2. Effect of pressing upon white silk that is stored. (Loss of moisture causes silk to turn yellow).

B. Wool

1. Source of wool fibres and countries producing wool.
2. Qualities of wool -
   (a) Variations visible under the microscope.
   (b) Structure of the fibre.
   (c) Length of fibre or staple.
   (d) Effect upon the fibre of domestication and cultivation.
   (e) Quality of wool found on different parts of the sheep.
3. Sources and uses made of reclaimed wool and wastes - munge, shoddy, wool, extract, waste or flocks, pulled wool. (Distinguish between virgin wool and shoddy).
4. Hair-bearing animals producing wool-like fibres. Uses made of the fibres.
5. Characteristics and physical properties of wool - chemical nature, absorbency, felting qualities, elasticity, strength, conductivity, affinity for dye, lustre.
6. Main processes of manufacture:
   (a) Woollens - scouring, carding, spinning, doubling yarns, dyeing in the slub, yarn or piece, weaving, finishing.
   (b) Worsteds - same as woollens with the additional processes of combing, gilling and drawing - many times repeated
7. Uses made of woollen and worsted yarns to include, suitings, underwear, bedding, dress materials, floor covering, hosiery, hats, etc.
8. Advantages and disadvantages of woollen and worsted materials for certain purposes.

9. Effect of changes of fashion on the finishing of materials.
10. Cleaning and caring for woollen and worsted materials to include:
    (a) Brushing and airing.
    (b) Steaming - to remove wrinkles.
    (c) Pressing - under a damp cloth; over a wool pad.
    (d) Removal of shine.
    (e) Use of hangers, tissue papers, etc.
    (f) Dry cleaning - practical household methods, precautions.
    (g) Laundering.

4. Each student shall mount in note book samples as indicated - the weave, width and cost to be stated:

Wool	Silk	Mixtures
Poplin or Rep	Satin	Silk and wool
Crepe	Taffeta	Silk and rayon
Tweed	Habutai	Wool and rayon
Gabardine	Flat Crepe	Wool and cotton
Broadcloth	Crepe de chene	Cotton and rayon
Jersey	Faille or Poplin	Cotton and linen
	Pongee, Tussah or Shantung	

COLOUR AND DESIGN

Specific objectives

To realize that both the colour and the line of the dress are important considerations if one wishes to appear becomingly dressed.

Desired Outcomes

1. Ability to choose and design clothes more intelligently by increased knowledge of art principles
2. To realize that "Colour, like music, may be studied either for the possibilities of enjoyment which it affords or for the sake of self-expression. But unlike music the opportunities and the occasions for self-expression in colour are intimately associated with the needs of daily life. There is an almost constant demand upon the individual to make choices of colour in dress, in the home, in business detail, selections which are self-expressibe since they reveal cultivation and taste, or on the contrary a lack of judgment" - Weinburg.

A. Study of colour to include -

1. Suggested sources of colour schemes, viz., nature, mineral, bird reptile and flower; china and glass; materials, ribbons and tapestries; rugs and old embroideries and laces; picture galleries
2. The effect of background colours upon the dress.
3. The effect of texture upon the colour of the material.
4. The importance of considering type, age, size, hair, eyes and skin when selecting designs, colours and materials, e.g.,
    (a) The light complexion with an aggressive forceful disposition may wear stronger colours, but as a general rule the pastel shades are better.
    (b) As a rule the dark complexion with a strong personality may wear bright colours.
    (c) Colours should be avoided which call so much attention to themselves that the wearer is unnoticed.
    (d) A person with high colouring should avoid colours that either by repetition or contrast emphasize her own colouring.
    (e) Sallow skin is made more sallow by wearing blue, pruple, mustard, green, orange, yellow and certain shades of tan and brown.
    (f) A girl with auburn hair can make her hair seem more brown by wearing blue or brown. The golden glints will be brought out by earing purple and lavender. Blue-green and green will make her appear more red.

(g) The repetition of a personal colouring as cheeks, eyes or hair intensifies that colouring and is a wise choice for many types to make.
(h) As one grows older and the hair changes it is sometimes necessary to change the whole colour scheme.
(i) If a dress is for day wear choose colour by day-light; if for evening wear, by gas or electric light.
(j) Bright intense colours make one appear larger than one actually is. Soft, dull and dark colours disguise one's size. (Students should experiment with colours and form their own conclusions as the study progresses.)

B. Design
1. Study of line as applied to dress to include -
(a) Becoming lines for the tall thin girl.
(b) Becoming lines for the short stout girl.
(c) Lines suitable for sloping or square shoulders - yoke, raglan, kimona, slant of shoulder seam.
(d) Becoming hat lines for differently shaped faces and different types of figures.
2. Draw attention to arrangement of parts as outlined in Sewing and Dressmaking 1, under "Areas within areas".

ECONOMICS

Specific Objectives
To plan the season's wardrobe by making a clothing chart.

Desired outcome
Appreciation of the value of careful planning in having a wardrobe that is harmonious and becoming, at least cost.

Steps of procedure in making a clothing chart to include:
1. Rule in notebook squares 1" x 1" (larger if necessary).
2. Write at top of sections: Occasion, Coat, Dress, Hat, Gloves, Hose, Shoes, Accessories.
3. What to do before filling in chart -
(a) Take an inventory of clothing on hand and note - garments to be mended; garments to be remodelled; garments to be purchased.
(b) Decide upon colour scheme for the season and aim to have garments and accessories harmonize.
4. Fill in chart neatly.

CONSTRUCTION

Specific Objective
To acquire knowledge that will lead to the successful making of silk and woollen garments.

Desired outcomes
1. Ability to select, cut, fit and sew simple dresses made of silk or wool.
2. Appreciation of the value of properly caring for garments made of animal fibres.

A. Study of drafted and commercial patterns
1. Review problems outlined for work in Dressmaking 1 - selection, interpreting and altering patterns.
2. Further work on altering patterns to fit variations from the standard figure, viz.
(a) One shoulder higher than the other.
(b) Narrow shoulder and large hip.
(c) Round shoulders.
(d) Changing length of boy's trousers.
3. Drafting patterns
N.B. A careful check on the accuracy with which measurements are taken should be made at the beginning of the term's work.
(a) Draft foundation block for a dress - waist or blouse (not kimona).
(b) Draft pattern for a flare skirt.
(c) Draft pattern for a shirt sleeve.
(d) Make pattern for a slip from foundation block, with modern lines and curves.
(e) Model on dress form or make from a flat pattern collars to fit various neck lines.

B. Computing amount of material required
1. Discuss the advantages of using wide material for flares, etc.
2. By demonstration show that narrow material is sometimes more economical in the end; e.g., when the pattern is cut into a number of gores or pieces.
3. Consideration in computing amount of material required to make ruffles and plaitings.

C. Fitting Garments
Further experience in dealing with the processes involved in the preparation and fitting of garments as outlined in the work of the first year.

D. Finishing Processes
1. Stitches - Review of stitches outlined in work of first year, with the inclusion of herring-bone, feather, chain, satin stitch, tailor's tacks, smocking.
2. Seams
   (a) Silk - French seam, plain seam with edges turned together and run or overcasted; plain seam, pressed open, cut edge turned under and stitched or run by hand; double overcasted edge forming a cross stitch effect.
   (b) Wool - Plain seam pressed open and pinked or overcasted; overlaid seam; bound seam.
3. Hems
   (a) Silk - Edge turned, run by hand or stitched by machine, and slip-stitched to garment.
   (b) Wool - Same method as for silk if material is very thin; edge pinked and slip-stitched; bias binding on edge and slip-stitched to garment.
4. Plackets - Tailored placket for side of skirt; facing blouse front.
5. Buttonholes - bound, made in cotton, silk and wool.
6. Pockets - slit and welt.
7. Sleeves - position of worker and sleeve, side on which to pin pin; basting and stitching.
8. Plaits - kinds of plaits, e.g., box plaits, side plaits, inverted plait, kilted plait.
9. Pressing - curved seam (should be notched), how and when to press various parts of garments, neck, selvedge.
   N.B. Students should be warned that some finishings are better not pressed.

E. Required projects
1. Any one: (Lounging outfit - (kimona and pyjamas)
   (Re-made dress
   (Slip - dainty handmade finish at top, curved seams.
2. Skirt, for self - wool - drafted pattern.
3. Blouse, for self - any material - drafted pattern.
4. Simple adult's dress - sool - set-in-sleeves, collar - commercial pattern.
5. Dress, for self - silk or crepe - commercial pattern. (Jacket and skirt may be made if in vogue.)
6. Mending - silk hosiery; mend tear in silk or wool with thread of self; use of mending tissue.

Textbook
Clothing for the School Girl - Baldt (Lippincott)

Reference Books
See List for Fabrics and Dress 1, above

FABRICS AND DRESS 3

A daily diary or log shall be kept by each student.

EQUIPMENT

Specific Objective

To understand and properly care for the working equipment in the sewing room.

Desired Outcomes

1. Application of the value of keeping the equipment in good working order.
2. Manipulative skills developed through the use of tools and equipment used in the construction processes in dressmaking and millinery.

A. Review lessons listed in Sewing and Dressmaking 1 and Dressmaking 2, checking carefully the girls' knowledge of proper use and care of equipment.

B. Introduce equipment used in making hats, viz.
   1. Crown blocks - electric; wood.
   2. Hat stands - wood; cardboard.
   3. Pliers, needles, etc.

TEXTILES

Specific Objectives

1. To gain a knowledge of the principles underlying the successful cleaning, renewing and refreshing of wearing apparel.
2. Ability to distinguish between hand-made and machine-made lace.

Desired Outcomes

1. Recognition ot the many ways by which clothing may be renovated.
2. Appreciation of work involved in the making of hand-made lace.

A. Review and continuation of the study of fabrics made of animal and vegetable fibres. A brief study should be made of the characteristics and uses of the minor fibres - jute, hemp, pina, ramie, asbestos, kapok.

Extended work should stress particularly:

1. The construction of weaves and finishes in relation to the life and appearance of the fabric.
2. Texture - Compare materials, e.g., serge, velvet, chiffon, organdie Let the girls use lengths of materials of different colours and textures to study the effect of feel, appearance, pleasing play of light, harmony of colour, becomingness, etc.
3. Simple tests for separation and identification of fibres.
4. Various methods of applying designs.
5. Properties of textile fabrics that affect health, e.g., absorption, conductivity of heat, cleaning, etc.
6. Felting qualities of wool and hair fibres. Study felt hats - fur felt; wool felt; cheap felt.

B. Study cleaning mediums and methods. The pupils should make a classified summary of the various agents used, e.g.

1. Solvents - liquids that dissolve grease or gummy substances.
   (a) Water - cold and hot, distilled.
   (b) Volatile liquids - alcohol (wood, denatured), ether, chloroform, carbon tetrachloride, acetone.
   (c) Cleaning oils - gasoline, naptha, benzine, benzene or benzol, kerosene, turpentine.
   (d) Acid materials - oxalic acid, hydrochloric acid, Potassium permanganate, hydrosulphite of soda, hydrogen peroxide, chloride of lime, javelle water, vinegar, lemon juice, salts of lemon, sour milk, buttermilk.
   (e) Alkaline materials - soap, ammonia, borax, sal soda, sweet milk.

2. Absorbents - as the name indicates, take up rather than dissolve the particles of dirt.
   (a) White powder - French chalk, magnesia.
   (b) Kitchen supplies - meals, salt, starch.
   (c) Non-plastic clay - white blotting paper, unglazed paper, unglazed cloth.

C. Dyes and dyeing to include:
1. Origin of dyes - vegetable, animal, mineral, coal tar.
2. Choice of dyes - kind of fibre.
3. Purpose - tinting or fast colours. Method and procedure.
4. Dyes used for tinting or light colours - dolly dyes, tintex, ink, tea, coffee, saffron, crepe paper, rit, twink, Sunset.

N.B. Application of the principles involved in cleaning and dyeing should be made in preparing material for the sewing classes, e.g., cleaning hats - summer and winter; hat lining; lace and trimmings; fur collars; garments. A piece of tied and dyed work may be included.

D. Study of Lace to include:
1. Brief study of the history of lace.
2. Difference in needlepoint and bobbin.
3. Names of some needlepoint and bobbin laces.
4. Kind of fibre used.
5. Have each girl study two old laces (one needlepoint and one bobbin observing:
   (a) Mesh - round, square, hexagonal, diamond shaped.
   (b) Pattern - hand-made.
   (c) Edge finish.
   (d) Beauty of design.
   (e) Kind of fibre.
   (f) Origin
6. Distinguishing characteristics of hand-made and machine-made lace, e.g.,
   (a) Buttonhole - stitches found in infinite variety in needlepoint lace; never in machine-made lace.
   (b) Unalaiting in hand-made lace very difficult.
   (c) Any padding required in hand-made lace is worked with a slanting stitch. In machine-made lace the padding is worked over and over straight.
   (d) Threads in machine-made lace have a twisted and compressed look.

COSTUME DESIGN

Specific Objectives
To gain a brief knowledge of the historical development of dress.

Desired Outcome
Some knowledge of how fashions have been created and a recognition of the relation of the costumes of today to those of the past.

Indirect Outcome
Realization that the Art of Dress, although it admits of innumerable variations, like all other arts it is subject to the three rules of beauty, viz., order, proportion and harmony.

Study of the historical development of dress. Comparison of costumes of past periods emphasizing only the pronounced distinguishing marks and the influences which brought them about. (This should be carried out in correlation with the work of the girls in their art and Sewing classes.)

1. Conditions which influence dress - climate, nature of material, due to civilization, environment, rank, social and political reforms and religious beliefs.

2. Sources of information: Carvings, sculptures and writings.

3. Study of Period Costume :
   (1) Egyptian - very little and thin clothing, straight lines, elaborate embroidery - lotus, papyrus and palm design. Rich colours in material and jewellery, jewelled headdress for protection froj the sun; bare feet or sandals. Linen and cotton materials.
   (2) Grecian - refined simplicity, beautiful line and proportion. Draped effects, girdles, delicate colours, rich embroideries. Crown, wreath or ornamental headdress; sandals, stockings without toes, wool, linen and silk materials.

(3) Roman - Elaborate gowns, striking colours, rich embroideries. Several tunics, one over the other. Greek simplicity not in evidence. Girdle indispensable. Hair curled, adorned with ribbons. Golden caul worn on head; or flowers. Shoes with slits in sides and straps. Coloured shoes worn.

(4) Byzantine - Fabrics noted for richness and variety of pattern. Styles Greek and Roman in form. Gaudy colours due to combination of pagan and Christian influences. Introduction of buttons and two coloured garments. Long right sleeves. Head covering - see picture of the Madonna. Coloured shoes or sandals.

(5) Middle Age or Gothic Costume - Introduction of close fitting garments (set-in-sleeves and black for mourning). Chemise and cloak worn. Flavour of the Oriental in design. Richly embroidered materials and expensive fabrics. "Parti-coloured" materials made. Velvet made its appearance, worsted material introduced. Elaborate hose of bright colours; long pointed shoes - laced and buttoned. Hennin headpiece, garget and wimple. Fashion dolls sent from France to other European countries. Three types of dress due to three classes of people.

(6) Renaissance - Costly materials; excessive use of lace and ribbons; high collars and ruffs, bell-shaped, slashed and huge sleeves. Tight waists, peplums and hair "curled and frizzed". Gloves, muffs and silk scarfs worn. Lace edged handkerchiefs. Muffs and fans used. Long trains, full skirts and hoops.

(7) 17th Century Dress - Exaggeration of fitted waists and pointed bodices. Bustles. Elaborately puffed and plaited open over-skirts. Bold and dashing elegance due to the influence of Spanish women and favorites of the king. Short sleeves; underskirt full, elaborately trimmed with lace, ribbons, furbelows and festoons. Much false hair mounted high; shoes of satin brocade or embroidered material fastened with buckles and ribbon. Parasols, fans and muffs. Materials - printed linens, India muslins, transparent materials, elaborate brocades, satins and velvets.

(8) 18th Century Dress - Pannier hoops. Scepter of fashion wielded by Madam Pompadour and Madame de Barry. Watteau or Princess dress; stocking with clocks. Short puffed sleeves with frills of lace. Hair powdered and dressed high. Materials - tulles, nets, fine cambrics and many dainty fabrics; gold and silver laces.

(9) 19th Century Dress - Empire waist lines and the tight basques. Oriental materials and styles due to the Napoleonic campaigns. Skirts full and decorated at the bottom. Sleeves short, puffed and decorated at the top. Military characteristics of hats and bonnets due to the war. Tailored suits.

(10) 20th Century Dress - Rapid change of custom. Specialized costume - sport, social, work. Simpler and fewer garments worn. Effect of War upon dress. Effect of motor car upon dress. Adaptation of the best of the past to the needs of today.

N.B. The above outline is given only as suggestions from which to select, add to or change.

4. The basic principles of colour and linear design should be reviewed and applied in connection with the practical phases of the clothing work. Topics to be included:

(1) Essential factors affecting choice of colour and design for the individual.
(2) Types grouped according to figure type.
(3) Types grouped according to personal colouring.
(4) Effect of colour value on the individual.
(5) Effect of intensity of colour on the individual.
(6) Analysis of complexion difficulties.
(7) Effect of Pattern and texture of material on individual.
(8) Appropriatness of design on individual.
(9) Use of colour and design to improve the individual.
(10) Effect of carriage upon appearance:
  (a) Slumping versus dignified carriage.
  (b) Lightness of feet.
  (c) Proper sitting posture.
  (d) Arms and hands held gracefully.
(11) Studies applicable to hat making:
  (a) Balance
  (b) Shape, size, line (should be studied before a full length mirror)
  (c) The hat in the silhouette.

ECONOMICS

Specific Objective

To gain a knowledge of the factors involved in true economy and thrift.

Desired Outcomes

(1) Realization that the matter of thrift and economy refer to more than the original cost of the garment.
(2) Knowledge of the factors which should be brought into consideration in selecting clothing.

A. Problems which face the consumer and manufacturer:
(1) Less demand for enduring materials.
(2) Prices no longer indicative of quality.
(3) Difficulty in distinguishing best values.

Reasons for the bargain counter:
(1) Articles returned in poor condition
(2) Short ends
(3) Out-of-date styles
(4) Novelty goods
(5) Merchandise bought in bulk
(6) Styles that did not take
(7) Seconds

B. Factors that influence the original cost of clothing:
(;) Value of fibre used
(2) Amount of goods produced
(3) Cost of preparation - fibre, weave, colour
(4) Pattern weave - added expense of designer
(5) Margins of profit to dealers varies with goods. Number of dealers getting a profit affects the final price.
(6) Wages of workers in the industry.
(7) Shipping costs preparatory to final sale, beginning with raw fibre.
(8) Import tax.

C. Styles and economy
(1) Disadvantage in buying extreme styles
(2) Introducing the fashion versus following the fashion
(3) Styles that require a great amount of material.

D. Remodeling possibilities of fabrics
(1) Quality of goods - durability
(2) Disadvantages of materials that wear well but lose their attractiveness by losing colour or becoming shiny.
(3) Reversing fabric may not only "change" it but may eliminate the appearance of shine, ink stains or wear.
(4) Cutting and slashing a garment in the first making renders it less suited to remodeling.

E. Far reaching influence of dress in our daily rounds:
(1) Effect upon self when well dressed
(2) Effect upon others when well dressed
(3) Why simplicity is to be preferred to gaudiness
(4) Dress an indication of character
(5) Standards of dress set by the consumer

CONSTRUCTION and RELATED MATTER

Specific Objectives

1. To increase ability to cut, fit, and finish garments made of wool, silk or other materials.
2. To acquire some ability to make a hat.
3. To gain a knowledge of the factors that influence the cost of a hat.

Desired Outcomes

1. Knowledge of the construction processes of millinery.
2. Recognition of the economic value of making one's clothing.

A. Dressmaking

Suggested Projects

(1) Remade garment - dress, child's coat, blouse, skirt (wool), boy's pants.
(2) Afternoon or evening dress. Pupil's activities to include:
  (a) Selection of suitable style
  (b) Selection of appropriate material
  (c) Calculation of amount of material required.
  (d) Selection and calculation of amount of trimmings, and findings required.
  (e) Making pattern - (To be developed from a drafted foundation block or an adapted commercial pattern).
(3) Elected project of an advanced type suggested garments - wool coat (simple style), wool dress (set-in-sleeves), silk or wool ensemble. Pattern to be blocked to measurements.

Construction Processes to include

(1) Seams - slot, welt, tuck, plain - overcasted or pinked.
(2) Hems - bias faced hem, shaped facing, gathered to fit.
(3) Bias - true and long (emphasize importance of a true bias for folds, pipings, bindings, etc.)
(4) Shirring - machine and by hand (drill if necessary, in running a gathering thread properly).
(5) Darts - method of making and finishing ends.
(6) Welt pocket.
(7) Stitches - French knots, fagotting, button-holed loops, arrowhead, tailor's tacks.
(8) Fastenings - worked button-hole; bound button-hole; material stitched and turned to form cord.
(9) Pressing - shrink fullness at top of sleeve, end of darts, hem of skirt, etc.

B. Millinery

Suggested Projects

(1) Remodelled hat
(2) New hat - seasonable materials.

Construction Processes to include

(1) Method of taking head measruements
(2) Method of taking a pattern of a hat
(3) Method of making a molded or wire foundation (not to be made if not in vogue).
(4) Hat linings - explain two kinds - French style and one-piece style. Make and put in lining.
(5) Stitches - slip, back, catch, running, basting, stab.
(6) Make bows and other ribbon finishes used in trimming hats.
(7) Method of making a sectional crown.
(8) Method of making a French fold.

Trade Terms used in Millinery

(1) Terms used to indicate the purpose of the hat - riding, dress, sport or outing.
(2) Terms used to indicate shape of hat - sailor, toque or turban, cloche brim, beret, tam, tricorn, poke bonnet, mushroom, Napoleon, etc.
(3) Other terms used - ensemble effect, ribbon hat, tub hat, picture hat.
(4) Names to indicate the material used in making hat foundations - Leghorn, Milan, Panama, Baku, Bangkok, Mohair, visca, etc.

Costs in a Milinery Shop

(1) Overhead expenses - rent, light, heat, telephone, equipment, wages of employees, trips to fashion centres, tax.
(2) Advertising - newspaper adds, bills, magazines.
(3) Stock - raw materials including shapes, material trimmings.
(4) Profit - (Explain the effect of short seasons and changing styles on the margin of profit).
(5) Reasons for charging 50% to 100% more than was paid at wholesale for hats and materials.

HOME-MAKING 3.

A daily diary or log shall be kept by each student.

FOODS AND DIETETICS 1

Study of Dietetics:

Aims:

1. To give a thorough working foundation to the student who is planning to take up nursing or institutional work as a vocation.
2. This section of the year's work should be a recapitulation and a very appreciable expansion of the work of the first two years.

1. Outline for Discussion Periods:

A. Thorough review of food principles.
B. Complete understanding of the digestive mechanism and knowledge of the digestion of all food stuffs.
C. Review of caloric values.
D. Proportionate requirements of the various food principles.
E. Study of the food for the adult man:
   (1) The sedentary man.
   (2) The muscularly active man - various degrees of activity.
   (3) The obese man.
   (4) The thin man.
F. Study of the food for the adult woman (under the same headings as for the adult man).
G. Study of infant nutrition:
   (1) Prenatal care.
   (2) Natural food supply.
   (3) Artificial feeding - modifications necessary.
   (4) Proprietary infant foods.
   (5) Weaning.
   (6) Importance of additional mineral supply.

H. Food for the two years old child.
I. Food for the three to four years old child.
J. Food for the five to seven years old child.
K. Food for the eight to twelve years old child.
L. Food in adolescence and youth.
M. Food for the family group - modifications.
N. Food after fifty.
O. Food in old age.
P. Study of food plans and dietaries with proper energy requirements, correct proportions of food principles, vitamins.
Q. Food for the sick and convalescent:
   (1) Necessity for a knowledge of energy requirements and the type of diet needed.
   (2) Study of typical menus for different types of invalid diets.
   (3) The convalescent diet.
   (4) [illegible]
   (4) The diet in minor illnesses: e.g. colds.
   (5) Diets for more serious illnesses: acute indigestion, intestinal putrefaction, fevers, tuberculosis, food poisoning, diabetes.
R. Deficiency diseases (cause, prevention and cure).
   (1) Eruptions of the skin.
   (2) Scurvy.
   (3) Rickets.
   (4) Ferophthalmia.
   (5) Beriberi.
   (6) Pellagia.
S. Relation of faulty nutrition to early loss of youth and vigor.

2. Outline for Laboratory Periods:

Foods and meals for the various types studied, should be actually prepared. The practical work should be carried along with the theory, thus stimulating and holding the interest of the class in the discussion periods.

DATE DUE SLIP

DUE AS RETURNED	

F255